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Report on fast food outlets (FFOs) in Tower Hamlets: a borough perspective

Report no 2

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Introduction

This report is the second on fast food outlets (FFOs) in Tower Hamlets, the first focussed on schools and the impact on children's food choices and dietary health. This report examines the wider influences of FFOs on food choice and the family and using a modelling process sets up various options to show the impact of fast food on dietary intake. The National Consumer Council recent report on takeaway restaurants reported that food from such outlets was often high in fat, salt, and sugar and making healthy choices was hard, even for those wishing to make healthy choices.¹

The literature points to a tension in the location of FFOs in an area where it has been found that more advantaged areas had closer access to supermarkets; conversely less advantaged areas had closer access to fast food outlets.² The foodservice industry of course argues that it is 'what' you eat that matters not 'where' you eat from that matters. Although in some areas the 'where' can be limited and if this is an abundance of fast food outlets then it follows that the food will be of a particular type and high in fat, salt and sugar. Without access to supermarkets offering a wide variety of affordable, healthy and suitable food poor and minority communities may not have equal access to the variety of healthy food choices available to non-minority and wealthy communities.³ Access is not just about the availability of food but also includes other issues, access is but one aspect of what is called food poverty or food security. There are six words which act as metonyms for the various processes involved in individuals or families obtaining their food and these are:

- Access.
- Availability.
- Affordability.
- Awareness.
- Acceptability and
- Appropriateness.

Many definitions of food poverty or food insecurity have cultural or social elements to them (acceptability and appropriateness), it is not just that the correct amount of food should be available but also that the food on offer should be culturally appropriate and acceptable, as well as affordable. Many of those living in food poverty report this aspect of food insecurity themselves with many reporting that not being able to afford a 'hot' meal or a specific food item is for them an indicator of both absolute and cultural poverty. Food poverty data for those on low incomes in London showed that food insecurity may be a common feature of households that have incomes at the level of the UK national minimum wage or lower, with 20% being

¹ National Consumer Council (2008) *takeaway health: how takeaway restaurants can affect your chances of a healthy diet*. NCC, London.

² Burns C and Inglis AD Measuring food access in Melbourne: Access to healthy and fast foods by car, bus and foot in an urban municipality in Melbourne. *Health & Place*. Volume 13, Issue 4, December 2007, Pages 877-885

³ Morland, K Wing, S, Diez Roux, A Poole, C Neighborhood Characteristics Associated with the Location of Food Stores and Food Service Places. *Am J Prev Med* 2002;22(1):23-29.

food insecure and 6% food insecure with hunger (Tingay et al, 2003)⁴. A Food Standards Agency report in 2007 showed that just over two-fifths on low incomes (39%) reported worrying about running out of money for food and 36% indicated that they could not afford to eat balanced diets (Nelson *et al*, 2007).⁵ So even if availability is okay you can be deprived of access due to a lack of financial resources or lack the cultural capital to shop in say a farmers market. Access can be mediated by a physical impairment or having three children to bring shopping with you. FFOs, in large numbers, are but one manifestation of the obesogenic environment. FFOs also offer an alternative to the routine of shopping, food preparation and cooking.

In terms of policy to address food inequality some key issues emerged in '*The Tackling Health Inequalities*' report which saw local planners as mapping '*food desserts (sic) so local 5-A-DAY programmes can improve food access*' (p 33).⁶ This suggests that the solutions are mainly located in individual agency and not in regulation or structural approaches to the local food environment. The recent obesity strategy for England Health '*Weight; Healthy Lives*'⁷ mentions fast food outlets and promises actions within planning regulations to allow local authorities to manage proliferations of fast food outlets:

Local authorities can use existing planning powers to control more carefully the number and location of fast food outlets in their local areas. The Government will promote these powers to local authorities and PCTs to highlight the impact that they can have on promoting healthy weight, for instance through managing the proliferation of fast food outlets, particularly in proximity to parks and schools (p 18)

At the time of writing (September 08) there was a review of the planning regulations for Policy Planning Statement 6 for town centres and none of the proposed changes specifically mention fast food or healthy food provision.

Cummins and colleagues (2005) point to the presence or absence of fast food outlets and neighbourhood deprivation providing support for environmental explanations for the higher prevalence of obesity in poor neighbourhoods.⁸ Associated with FFOs is the sale of foods high in fat, salt, and sugar. The 2003 California High School Fast Food Survey reported that the most frequently reported brands sold through food service were Coke (36 percent), Pepsi (32 percent), Taco Bell (26 percent), Domino's Pizza (25 percent), and school district brands (24 percent).⁹ Consumption of fast food has an adverse effect on diet for both chronic disease patterns and obesity. Eating out inevitability means you lose some control of the

⁴ Tingay R S, Tan C J, Tan N C-W, Tang S, Teoh P F, Rebecca Wong R and Gulliford M C, Food insecurity and low income in an English inner city. *Journal of Public Health Medicine*;2003;25(2):156–159

⁵ Nelson, M. Erens, B., Bates, B., Church S. and Boshier, T (2007) *Low income diet and nutrition survey*. London; Food Standards Agency.

⁶ Department of Health. (2003), *Tackling Health Inequalities: A programme for action*. Department of Health, London.

⁷ HM Government, (2008) *Healthy Weight, Healthy Lives: A cross-government strategy for England*. Department of Health and the Department for Children, Schools and Families, London.

⁸ Cummins, SJC, McKay, L and MacIntyre S. (2005), McDonald's Restaurants and Neighborhood: Deprivation in Scotland and England. *Am J Prev Med* 2005;29(4):308–310

⁹ Craypo, L and Samuels, S () The 2003 California High School Fast Food Survey

food served to you.¹⁰ Where there are a large number of fast food outlets in an area we know that BMI in children increases.¹¹ The issue is not that people should not eat away from home but that the environment makes it difficult for people to eat healthy away from home. In a US study it was found that poorer neighbourhoods with a higher proportion of African American residents had fewer healthy options available, both in food selections and in food service; restaurants in these neighbourhoods heavily promote unhealthy food options to residents thus increasing the likelihood of nutrition insecurity and increasing inequalities.¹²

We know that public health policy in the UK and in other countries advocates dietary change as a means to improve population health¹³ and that in particular diet is an important determinant of chronic diseases such as cardiovascular disease, some cancers, and diabetes. Increased intake of fat over energy expenditure leads to obesity and overweight. These are risk factors for cardiovascular disease, type 2 diabetes, musculoskeletal disease and a range of respiratory conditions. The prevalence of obesity globally has increased significantly in recent years, and is currently estimated at 400m adults worldwide. In the UK obesity prevalence has more than tripled in the past 25 years to over 23% in 2005. The National Audit Office estimates that obesity costs England 18 million sick days and 30,000 excess deaths annually¹⁴ The WCRF authors estimate that between 30 and 40 per cent of cancers are preventable by appropriate food nutrition, regular physical activity and avoiding obesity.¹⁵

With the aim of improving the health status of the population we have seen concerted public health programmes led by the Food Standards Agency (FSA) working with manufacturers and the public generally to decrease salt intake¹⁶ and more lately to decrease saturated fat intake and energy¹⁷. There are also numerous local programmes in areas of health inequalities targeted at improving diet however these are generally not targeted at specific nutrients, rather they are targeted at improving the overall diet e.g. Cook and Taste etc.

Both the salt programme and the saturated fat and energy programme were developed on the back of robust scientific evidence that these nutrients when taken in amounts above the recommended daily intake have a negative effect on health. Evidence suggests that the national campaign on salt has had an impact on dietary intake with a measure reduction in intake in a sample population from 9.6grams to 8.6 grams. The population sample of the study was small but representative of the UK wide population. It is likely that the

¹⁰ Bowman, SA Gortmaker, SL, Ebbeling, CB (200?) Mark Effects of Fast-Food Consumption on Energy Intake and Diet Quality Among Children in a National Household Survey.

¹¹ Lin Biing-Hwan and Guthrie J. ()The Quality of Children's Diets At and Away From Home. 202) 219-0854 (202) 606-4837 FoodReview

¹² Lewis, LVB , Sloane DC, Miller Nascimento L, , Diamant, AL, Guinyard, JJ , Yancey, AK, Flynn G, (200)African Americans' Access to Healthy Food Options in South Los Angeles Restaurants

¹³ Department of Health (2004) *Choosing health: making healthier choices easier*. London: Department of Health, 2004.

¹⁴ National Audit Office (2001) *Tackling Obesity in England*. London: NAO

¹⁵ World Cancer Research Fund / American Institute for Cancer Research. (2007) *Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective*. Washington DC: AICR.

¹⁶ Available on <http://www.salt.gov.uk/> Accessed 09/10/2008

¹⁷ Available on <http://www.food.gov.uk/multimedia/pdfs/satfatprog.pdf> Accessed 09/10/2008

reduction in intake has primarily been as a result of reformulation of manufactured food products.

The saturated fat and energy campaign was launched early in 2008, and so there are no outcomes as yet. However the programme has four specific objectives:

1. improving consumer awareness and understanding of healthy eating with particular focus on the impact of saturated fat on health;
2. encouraging promotion and increased uptake of healthier options, for example reduced fat products and retailers' 'healthier' ranges;
3. encouraging increased accessibility of smaller food portion sizes; and
4. encouraging voluntary reformulation of mainstream products to reduce saturated fat and energy.

Trans fats were considered particularly give the actions to ban or reduce trans fats in food outlets in New York and Denmark. The Scientific Advisory Committee on Nutrition (SACN) had previously advised that trans fats do have an effect on increasing the risk of coronary heart disease and advised that levels should not exceed 2% dietary energy¹⁸. For the majority of the population it is unlikely that the dietary trans fats will contribute more than 2% dietary energy, however the biggest contributor of trans fat to a diet is hydrogenated vegetable fat which is widely used in catering outlets and food manufacture and tends to be a cheap product to use. We therefore assume that people from lower socio economic groups tend to eat more hydrogenated fat and by extension more trans fats than other sectors of the population.

Neither of the two national FSA programmes are formulated to target areas of health inequalities; however it is known that members of low income households are more likely to have patterns of food and nutrient impact that contribute to poor health outcomes¹⁹, therefore it would be expected that the proportional impact of improved diet would fall to hose on low-incomes. National data from the Low Income Diet and Nutrition Survey (LIDNS)²⁰ found that low-income families are more likely to consume high fat processed meals or fast foods and snack foods. This applies particularly to children and younger adults.

Methodology

Part one of the study centred on school students and their use of fast food outlets. Following on from this it was agreed with the steering group for this study that the focus should be on fast food outlets (FFOs) for the wider community. We first of all mapped the spread of FFOs across the borough in relation to a number of indices then focussed on a smaller study area. The work was carried out between June to July 2008, with the observations in the FFOs taking place in July before the advent of school holidays. The study area was chosen by the steering group to be the Ocean New Deal for Communities (NDC) with the addition of Whitechapel Road and its environs down to the junction with Vallance Road; this area contains a range of FFOs, retail outlets as well as a number of schools. A map of the area is below;

¹⁸ Available on http://www.sacn.gov.uk/pdfs/sacn_trans_fatty_acids_report.pdf Accessed 09/10/2008

¹⁹ Dowler, E (2008) Policy initiatives to address low-income households' nutritional needs in the UK. *Proceeding of the Nutrition Society*. 67, 289 – 300.

²⁰ Available on <http://www.food.gov.uk/science/dietarysurveys/lidnsbranch/> Accessed 09/10/2008

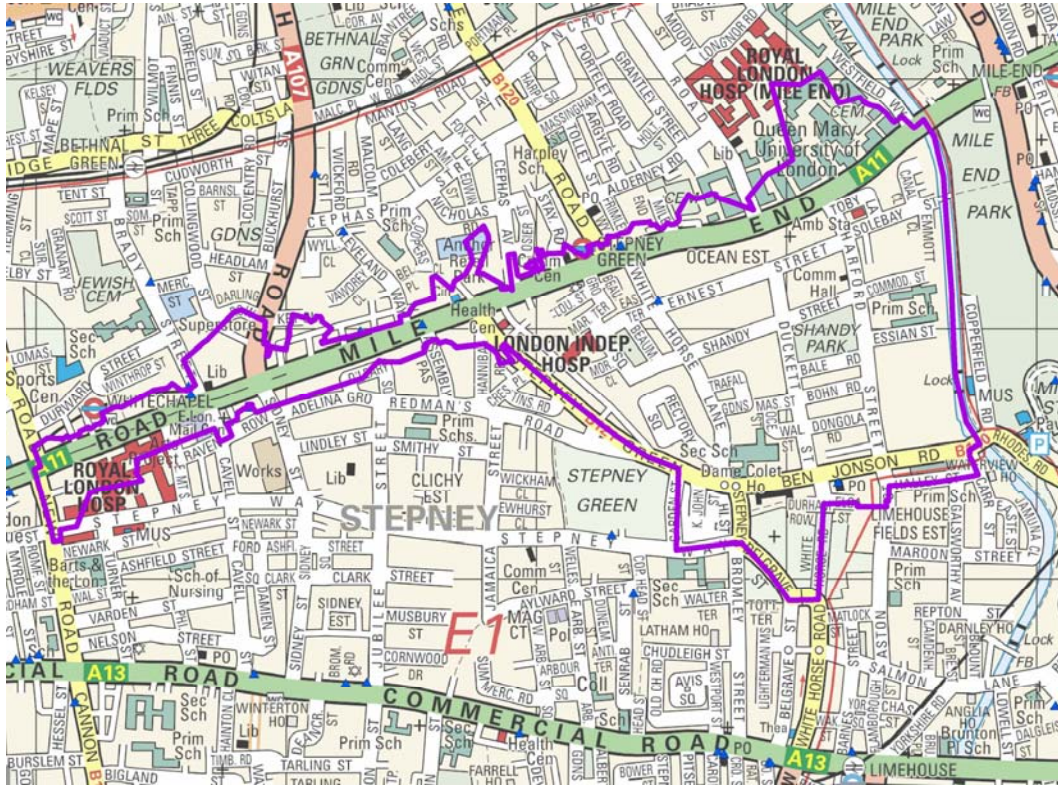


Figure 1- Study Area

The rationale for choosing this area was:

- It is an area of a practical size to carry the study out in.
- It contains a variety of FFO and retail outlets.
- The Whitechapel Road is an area of concern for its high concentration of FFOs with policy makers locally (LBTH, LBTH Councillors & the PCT).
- Whitechapel Road will form part of High Street 2012 a project linked to the Olympics which the outcomes of the project may be able to influence.

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

1. Mapping of FFOs in the borough and the study area including:
 - What food options they have, menu choices and healthy options.
 - Carry out observations of selected FFO to determine:
 - Who uses them.
 - What types of food are on offer.
 - Who makes the food choices when buying (particularly for families).
 - Is additional salt readily available.
 - Assessment of immediate environment.
2. Assessment of healthy food options in retail outlets with:

- Mapping of retail food premises in the study area.
 - Assessment of fresh fruit and vegetable provision based on a reasonable number of fruit and vegetables (5 and 7 respectively) as a proxy measure for healthy choice.
 - Assessment of unhealthy food provision.
3. Sampling food for nutritional analysis and development of menus showing the impact of eating take-away food.
- Sampling from selected (typical) FFOs to determine nutritional content of offered food choices.
 - Modelling impact based on estimated average requirements.

Mapping of all FFOs in the borough

Food businesses are required to register with the relevant local authority under The Food Hygiene England Regulations, 2006 and this is a publicly accessible register. A copy of the registered food business in Tower Hamlets was obtained from Environmental Health department at the London Borough of Tower Hamlets. This contains not only the names and addresses of food businesses but also the geographic coordinates and the Tower Hamlets assigned usage type. FFOs were identified from the database of registered food premises supplied by the local Environmental Health department. They were taken to be those premises designated as ‘takeaway’ plus a number of additional premises designated as ‘restaurant’ which from their descriptions were clearly FFO outlets. FFOs across the borough were mapped as well as for the study area. In the study area these were verified by visiting all premises. Photographs were taken of each of the premises. A variety of these FFO were chosen for observation in the study area, the types are listed in Table 1. These were decided on as representing the range of FFOs in the area in terms of they type of outlet and also in terms of the food on sale. It was decided that the observation period would coincide with the usual period for an evening meal and so was set at 17.30 – 20.00. A copy of the observation form is attached as appendix A.

Assessment of other food sources

Retail premises were identified from the database of registered food premises as ‘mini market’, ‘off licence’, ‘grocery’, ‘supermarket’ and ‘news agent’. The whole area was surveyed (see Appendix B); any additional food premises found were also surveyed and added to the database. Whether fruit and vegetables were on offer and the foods on offer in each premises were noted as well as the quality of the goods on offer. The assessment of acceptable quality of fruit and vegetable was made by observing the food on display. If the food looked as if it was attractive to the buyer, that is it was not bruised, dried up or wrinkled etc. when it was not supposed to be, it was deemed to be of acceptable quality.

Sampling of food for nutrient analysis

Five outlets were chosen as representative of the types of FFOs in the area. Sampling of food from the chosen FFOs was carried out by Environmental Health Officers from LBTH. The analysis of the food was undertaken by their appointed public analysis Eurofins. The samples were tested for energy, fat, saturated

fat, carbohydrate, sugars, protein, salt / sodium and fibre. The foods sampled and analysed are outlined in the following table.

Table 1 Takeaways by type and food samples taken

Type of takeaway	Samples taken
Pizza bar	1. A small pizza with meat 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 takeaway 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 takeaway	10. A small shish kebab 11. A small doner kebab 12. Chicken curry 13. Meat curry 14. A portion of boiled rice
Fried chicken takeaway	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

Study analysis

The foods were analysed for the ‘big 8’ nutrients energy, protein, carbohydrate, total sugars, fat, saturated fat, dietary fibre, and sodium. The fat analysis was broken down further providing data on the trans fat content of the food.

Using the nutrient analysis from the food samples we profiled all the sampled the foods using the FSA front of pack signpost labelling which is based on a nutrient profiling model.

FSA front of pack labelling

Table 1 – Food (per 100g whether or not they are sold by volume)

	Green (Low)	Amber (Medium)	Red (High)	
Fat	≤ 3.0 g/100g	> 3.0 to ≤ 20.0 g/100g	> 20.0 g/100g	> 21.0g / portion
Saturates	≤ 1.5 g/100g	> 1.5 to ≤ 5.0 g/100g	> 5.0 g/100g	> 6.0g / portion
Total Sugars	≤ 5.0 g/100g	>5.0 to ≤ 15.0 g/100g	> 15.0 g/100g ³	> 18.0g / portion ³
Salt⁴	≤ 0.30 g/100g	>0.30 to ≤ 1.50g/100g	> 1.50 g/100g	> 2.40g / portion ⁵

⁴Sodium expressed as salt

None of the foods that were analysed contained fruit sugar and therefore we did not need to update the calculation for products containing fruit sugar into account. We recognise that this system was not designed for analysing food from fast food outlets; however it is a robust mechanism for providing a simple framework for understanding the nutrient content of these foods and a mechanism by which comparisons can be made between the foods. In addition this clear system is understood by consumers.²¹ From this we constructed a table using red (high nutrient content), amber (medium nutrient content) and green (low nutrient content) for each food.

We also constructed a number of meal plates showing the impact on dietary intake. This involves modelling of dietary intake to show the impact of fast food on calorie and nutrient intakes. We attempt to model the impact of one to three take-away meals a week on dietary intake of specific family members (i.e. a 14 year old boy and girl) and the impact on their nutrient intake.

Findings

Number and Siting of FFOs

There are 2214 registered food businesses in Tower Hamlets for the classes of usage to be utilised in the study the dataset was checked for duplicate entries which were removed if found, and for missing geo-codes (x & y coordinates) which were added if missing.

Tower Hamlets as a whole has 297 grocers and or mini-markets and 98%v of households (93,219) are within 10 minutes walk of this type of premises. Figure 2 shows the 10 minute isochrone for this type of premises. An isochrone is an area that can be accessed in equal time, in this case based on a nominal normal walking pace 10 minutes walking time is taken to be equivalent to about 800m. A full description of isochrones and their construction can be found in the Food Access Radar produced by the national consumer council²².

²¹ Van Kleef, E., Van Trijp H., Paeps F., Fernandez-Celemin, L. (2007) Consumer preferences for front-of-pack labelling. *Public Health Nutrition* 11; 2; 203 – 213.

²² Day N & Vining J, 2006, *Food Access Radar*: London, National Consumer Council, accessed 17/04/08 at <http://www.ncc.org.uk>

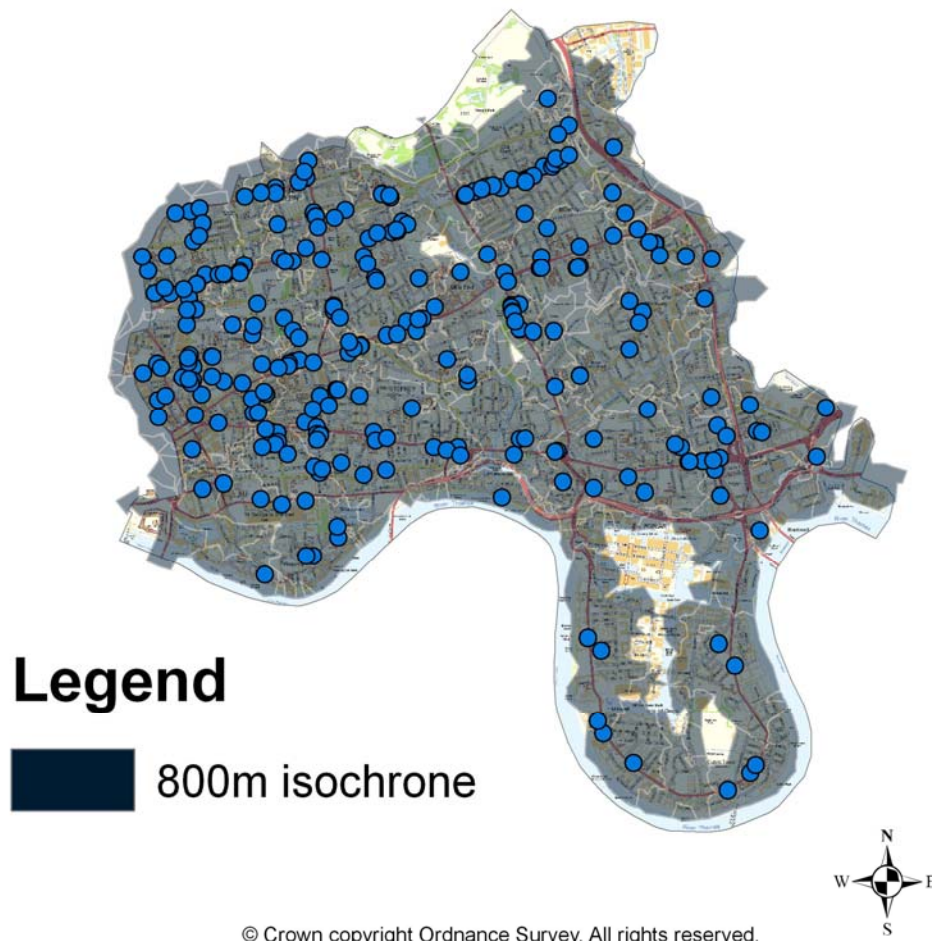


Figure 2 – 10 minute isochrones for grocers and or mini-markets

There were 36 retail food outlets and 114 market stalls in the study area. This information was gathered from a combination of visits and observations alongside use of the environmental health database. Only a small number of market stalls sold food. For this part of the study the food premises database was re-examined. From observations on the ground it was clear that some premises that operated primarily as fast food take away outlets were classified as restaurants. This tended to occur if the outlet contained one or two tables available to the public. In such circumstances although a majority of their business would be take away sales, because there was some where for the public to sit down and eat on the premises they had been classified as restaurants. They were initially identified by name and where appropriate reassigned to the take away category for the purposes of this study. Where there was any doubt a visit was made to verify the correct classification.

The observation sheets for the retail outlets highlighted the fact that many had little healthy food on prominent display or special offer. Nearly 45% (16 out of 36) sold confectionery or crisps close to the checkout; whilst only just over 20% (8 out of 36) had a prominent display of fruit or vegetables. In addition to the retail outlets is Whitechapel market, which is a retail market open 08.00- 18.00 Monday to Saturday.

It is a general market with only 20% of the stalls selling food with these predominantly selling fruit and/or vegetables accounting for over 17% of the total number of market stalls.

We did not carry out a food basket availability or price survey on goods in the study area, but used the availability of a reasonable number of fruit and vegetables as an indicator of healthy options being available. This from previous work was 5 fruit and 7 vegetables.^{23 24} This proxy indicator took the form of the availability of 5 fruit and 7 vegetables in any one shop. For the purposes of this study the fruit and vegetables was only recorded if it was fresh. The authors are aware that the nutrient content of fresh, frozen and tinned vegetables is generally comparable, however in on this occasion we were concerned to observe the accessibility of fresh fruit and vegetables. There is also an argument that availability fresh fruit and vegetables are more appropriate indicators of inequality. Tinned and frozen goods while nutritionally appropriate do not reflect culturally appropriate choices and there is an argument that the poor should be able to choose from fresh produce in the same way as the well off.²⁵ Potatoes are not included in the five-a-day recommendations and therefore were not recorded. As can be seen from table 2 below, approximately 35% were selling more than 5 fruit or vegetables and on the basis of the observers' judgment less than 20% of these were acceptable in terms of quality. Using these indicators accessing acceptable healthy food, in the study area provides an overall picture of limited availability of healthy appropriate options.

Table 2 details of Markets Stalls and Retail Food Outlets

Market	Number (n= 114)	Percentage
Food Stalls selling food	23	20%
Selling fruit	9	8%
Selling vegetables	18	16%
Selling fruit and vegetables	7	6%
Retail Food Outlets	Number (n = 36)	Percentage
Confectionary etc		
Selling Crisps	30	83.33%
Selling Sweets	33	91.67%
Selling Chocolate	29	80.56%
Selling non-diet carbonated drinks	33	91.67%
Selling all four of the above	26	72.22%
Those selling takeaway type items		
Selling sandwiches	18	50.00%
Selling hot pies pasties etc	5	13.89%
Selling hot Indian type snacks	2	5.56%
Selling all confectionary items and one take away type item	15	41.67%
Those selling fruit and vegetables		
Selling 5+ types fruit	13	36.11%

²³ Dowler, E., Rex, D., Blair, A., Donkin, A. and Grundy, C. (2001), *Measuring Access to Healthy Food in Sandwell*, Sandwell Health Authority, Sandwell.

²⁴ Bowyer S, Caraher M, Eilbert K, Carr-Hill, R, (2008) Shopping for Food: Lessons from a London Borough. *British Food Journal* Forthcoming

²⁵ Lang T, Sharpe R, Caraher M, (2002) *Food, access to shops and transport: What movement since PAT 13? Report to Social Exclusion Unit*. London: Social Exclusion Unit, Cabinet Office.

Selling acceptable quality 5+ fruit	12	33.33%
Average number acceptable fruit	7.4	
Selling 7+ types vegetables	12	33.33%
Selling acceptable quality 7+ vegetables	10	27.78%
Average number acceptable vegetables	17.5	
Selling acceptable quality 5+ fruit and 7+ vegetables	7	19.44%



Figure 3 - 10 minute (800m) isochrones of fast food outlets

Figure 3 shows the location of FFOs in Tower Hamlets with 97% of households within a 10 minute walk. In the study area itself all households were within a 10 minute walk of a FFO and over 69% were within a five minute walk of such an outlet.

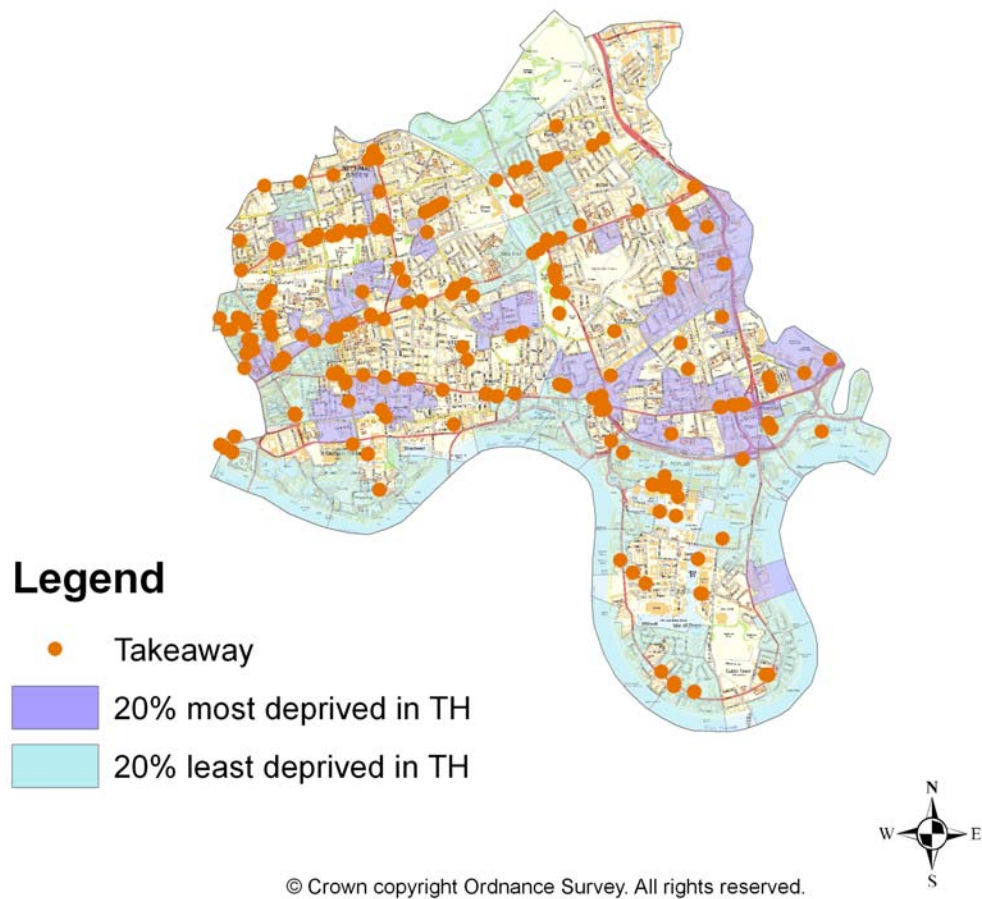
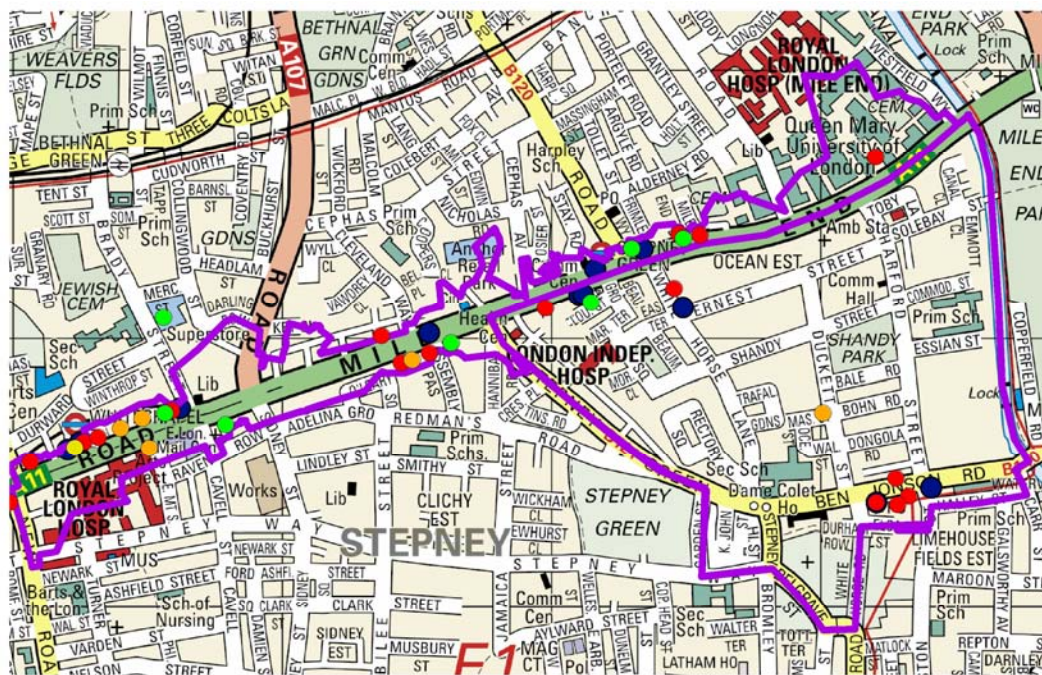


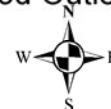
Figure 4 - Deprivation and fast food outlets

Figure 4 shows the 20% most deprived and 20% least deprived super output areas (SOA) within Tower Hamlets (note not national ranking) as defined by the index of multiple deprivation 2007 (IMD, 2007). The most deprived 20% SOAs contain 18% of both the takeaway outlets and households; the least deprived 20% of SOAs contain 35% of takeaway outlets and 26% of households.



Legend

- Fruit and Veg
- Veg but no fruit
- Study Area
- Fruit but no veg
- No fruit or veg
- Fast Food Outlet



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Figure 5 - Location of FFO and retail food outlets in study area

Observations of fast food outlets in the study area

The observations of FFOs took place in five premises and between the hours of 17.30 and 20.00. We observed the five premises over a week. The principal observation was that there were few families eating in the premises and families ordering and taking out the food. In order to get a realistic picture of what people were eating customers were not aware that they were being observed. This is also a weakness of observation in that it allows you to see what goes on in the takeaway but not to accurately record the numbers of portions being ordered, in other words we were not in position to measure the number of take-away meals ordered and delivered. Additionally age range was based on observation by the researchers, What we did observe was:

- The large number of young men using the take-aways.
- Little female usage.
- That when families buy food together the more senior member of the family usually makes the food choice,
- The largely unhealthy choices available to customers.

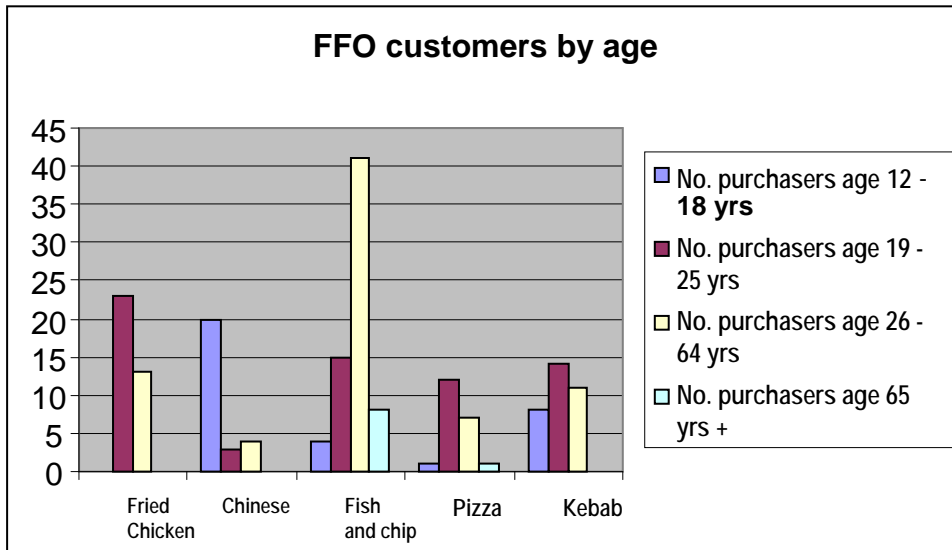


Figure 5. Breakdown of customers by age

It is clear from figure 5 that the majority of users of all the fast food outlets were between 19 years and 64 years old, a total of 143 of 185 customers. Of these 143 customers the majority were male and less than 30 years old. In comparison, the number of families using the fast food outlets was small at 21 families in total consisting of 53 individuals. Family groupings tended to consist of one adult (again mainly men) plus one or more children. In the majority of cases the person observed making the food choice was the adult, in 18 families the adult made the choice. In only two families observed did the children play an obvious part in the choice of food.

Even though each premises we observed advertised itself by name as selling a specific type of takeaway meal e.g. a fried chicken franchise, the reality was different. The franchise outlets also sold burgers and chips. A similar pattern was seen in the other takeaways, the majority sold fried chicken and all sold burgers and several sold kebabs, only one outlet that we surveyed sold pizza. The choice available to the local population is not as wide as it appears at first. All premises, of course, sold chips and none had any alternative to chips other than equally high calorie and fatty potato fritters.

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 fast food outlets sold water and the majority had a small selection of 'diet' drinks generally cola; however the vast majority of drinks available were carbonated drinks with sugar.

The foods that families chose varied and depended on what was available on the menus. However it was clear that families did not buy soft drinks at FFOs. On the other hand the young men who were buying food often bought canned drinks. In the table below we have included the nutrition breakdown on drinks, the figures were analysed from standard nutrition tables.

Nutrient analysis

Table 3 shows an analysis of the nutrient profile of all the fast food meals sampled. Many of the foods showed an unhealthy nutrient profile; particularly many of the foods were high in fat, saturated fat, and sodium. All the foods sampled were savoury and savoury foods usually do not contain a high level of total sugars, for this reason all foods were green for total sugars. The nutrient content of 4 of the meals – pepperoni pizza, small cod and chips, chicken chow mein and egg fried rice, and chicken wings and chips is included as appendix C. It should also be noted that the portion sizes we chose were the smallest portion size available. The most significant findings are highlighted in the following text.

Table 3: Nutrient profile and trans fat content of all the fast foods sampled

Type of takeaway	Samples taken	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 from the fish and chip shop	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	√
	6. A vegetable chow mein	Amber	Green	Green	Red	√
Chinese takeaway and fish and chip shop	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 takeaway	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	√

Soft drinks (all outlets)	Cola	Green	Green	Red	Green	X
	Fruit based sugar drink e.g. Mango	Green	Green	Red	Green	X
	Diet drinks	Green	Green	Green	Green	X
	Water	Green	Green	Green	Green	X

Key:

Red – High content of nutrient per portion;

Amber – Medium content of nutrient per portion;

Green – Low content of nutrient per portion.

Pizza bar

- The small pizza which was tested was particularly high in saturated fat, due to the cheese and pepperoni content.

Fish and chip shop

- The fish and chip shop foods are high in fat and saturated fat with the exception of the chicken. The chips and fish are likely to be high in saturated fat, because the oil that they are cooked in will have been used a number of times; the pie to be high because of the type of fat used in the pastry; the chicken is lower in fat because the edible portion size is small 76g.
- While the sodium content of the chips and fish were of little concern the sodium content of the chicken was of concern being high, 0.55g/serving. The equivalent of 1.3g salt in product that was neither covered in a salt containing coating nor had any added visible salt.

Chinese takeaway

- Both the 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.
- Of greatest concern is the high level of sodium in the food, with the exception of the boiled rice which contained no salt, all the foods had a high level of sodium. The highest level reported was in the egg fried rice 1.33g/serving. The equivalent of 3.3g/serving of salt (more than 50% of the recommended daily recommended dietary intake in one food). This is not surprising as these findings have been reported before; however it is of concern as this seems to be a national / international phenomenon.

Kebab house

- The food in the kebab house, particularly the doner kebab, and the meat curry had particularly 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. The plus side of this is that reformulation by a central producer could improve the nutrient profile of this product for all the fast food outlets.

- All the foods with the exception of the shish kebab and the boiled rice had a red profile for sodium indicating a high content; it should be noted again that the boiled rice had an all green profile, clearly indicating that nothing is added to this product, not even salt.

Fried chicken takeaway

- As with the fish and chip shop the chips in the fried chicken outlet had a high fat and saturated fat profile, suggesting this is due to the oil being used to cook this product.
- The chicken wings, burger, cheeseburger, and vegeburger were all the smallest portions available, and all had medium levels of fat, saturated fat, and salt. The chicken wings are of particular concern, the edible portion was only 57g, and the food did not have healthy profile and contained 0.18g/ serving sodium the equivalent of 0.5g salt.

Salt

It is important to note that the salt content discussed above does not include any added salt that customers add in the FFO or that they add at home. Two of the five fast food outlets we observed provided salt free on the counter, however not all customers were adding this to their food.

Soft drinks

All the FFOs sold sugar containing soft drinks in 330ml cans, on average these provide 139 – 175 Calories (per 330ml), all of these calories are provided by sugar. Each 330ml portion contains 35 – 43 grams sugar. These drinks provide no other nutrients other than water. They provide ‘empty’ calories. The diet drinks and water on the other hand provide similar amounts of water; the water is more readily available for the body to use as the drink is hypotonic; and the Calorie content is usually less than 5 Calories/ 330ml.

Trans fats

Of particular note is that all the foods tested with the three exceptions of boiled rice (2) and chicken curry contained trans fatty acids. Trans fats do not generally occur naturally in foods; most trans fat in the diet are 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.²⁶ Responsible manufacturers are now aiming to reduce trans fats to the lowest level possible in processed products. Current recommendations suggest limiting intake of trans fats to less than 2% energy intake. 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. Overall the fact that many of the vegetable foods contained trans fats and the trans fats in some of the animal products were very high is of significant health concern.

We modelled the nutrient content of one, two, and three fast food meals eaten in one week. Table 4 shows the energy content, fat content, saturated fat content, and salt content of the meals. The percentage energy from fat and from saturated fat in the meals is also calculated.

²⁶ Geissler, C and Powers, H (2005) *Human Nutrition*. Philadelphia: Elsevier Churchill.

Table 4: Contribution of fast food meals (for one to three meals) to nutrient intake

	Energy Kcal (av.)	Fat g (av.)	Percentage energy from fat in the fast food meal (av)	Saturated fat g (av.)	Percentage energy from saturated fat in the fast food meal (av)	Salt g
Girl -14 years	525	21	36	11.2	19	1.7
Boy - 14 years	525	21	36	11.2	19	1.7
	Energy Kcal (av.)	Fat g (av.)	% energy from fat in the fast food meals (av)	Saturated fat g (av.)	% energy from saturated fat in the fast food meals (av)	Salt g
Girl -14 years	1722	70.7	37	31.5	16	2.2
Boy - 14 years	1722	70.7	37	31.5	16	2.2
	Energy Kcal (av.)	Fat g (av.)	% energy from fat in the fast food meal (av)	Saturated fat g (av.)	% energy from saturated fat in the fast food meal (av)	Salt g
Girl -14 years	3248	123.2	34	37.1	10	11.5
Boy - 14 years	3248	123.2	34	37.1	10	11.5

In our model one person consuming three fast food meals per week consumed 3248 Calories from fast food. This is more than the Estimated Average Requirement for an entire day for any one family member, the highest energy requirement in a family is 2,755 Calories for an adolescent male.

From Table 4 fat intake from fast food varies depending on which meals are combined. When the pizza and cod and chips are combined the fat intake increases to 37% energy from fat and 16% energy from saturated fat, both levels are above the recommended levels of 30% energy from fat and 10% energy from saturated fat. In our model when a Chinese meal is then added in 52.5 grams of fat is added to the intake, however because of the increase in carbohydrate intake the percentage energy from fat decreases to 34% and percentage energy from saturated fat to 10%. All the foods also contain trans fats, although at a level of less than 2% energy content.

Our model also shows that this selection of three meals would result in an intake of 11.5 grams of salt, mainly from the Chinese meal. With the recommended intake being 6 grams per day, 11.5 grams represents the intake for two days. Again this does not take into account any salt added to the meal.

We chose the smallest portions sizes available for our model, therefore the calculated levels of intake would be higher if the family member chose a larger portion. All calculations assume, of course that there is no waste from the meal.

In summary this modelling shows that even though a family member, or family members may not make the choice of meals that we have modelled, the reality is that the choice is likely to be high in fat, often high in saturated fat, always contain some trans fats and often the choice will be high in salt. Of course the impact this has on an individual's diet depends on how many times fast food is eaten each week. Using the data

from the three meals modelled in Table 4 we have calculated the contribution of one, two, and three fast food meals to the overall energy, fat, saturated fat and salt intake of a family member for a week.

Table 5: Contribution fast food meals (for one to three meals) in a week to the energy requirement of one family member (analysed against female and male Estimated Average requirement for energy).

	Energy Kcal (av.)	% EAR	Fat g (av.)	Saturated fat g (av.)	Salt g
Girl -14 years (EAR 1845 Calories)	75	4	3	1.6	0.2
Boy - 14 years (EAR - 2220 Calories)	75	3	3	1.6	0.2
	Energy Kcal (av.)	% EAR	Fat g (av.)	Saturated fat g (av.)	Salt g
Girl -14 years	246	13	10.1	4.5	0.3
Boy - 14 years	246	11	10.1	4.5	0.3
	Energy Kcal (av.)	% EAR	Fat g (av.)	Saturated fat g (av.)	Salt g
Girl -14 years	464	25	17.6	5.3	1.6
Boy - 14 years	464	21	17.6	5.3	1.6

Table 5 shows the average Calorie contribution to the diet of two family members of one, two and three, varied fast food meals a week is 75Cal; 246Cal; 464Cal per day. If it is assumed, as in our previous paper²⁷ that the one family member is a 14 year old child (female or male) it can be seen from the data that an intake of three fast food meals can contribute up to 25% estimated average requirement (EAR) for energy for the whole week. These calculations exclude Calories from sugar containing drinks, and we have data from our first round of research that children who buy fast food are likely to buy a sugar containing drink with the food. If three drinks were bought and drunk this would add on average an additional 79 Calories per day, increasing the fast food meals contribution to 29% estimated average requirement (EAR) for energy for the whole week. Our focus groups indicated that some children reported regularly eating fast food three times a week. A 25% - 29% energy intake from fast food is of concern, particularly as fast food is known to have a higher energy density and to be lower in micronutrients than other more nutritious food such as fruit and vegetables.

In terms of the health of the population of Tower Hamlets there is another factor that has an equal if not higher impact on health. The analysis shows that the fast food meals are relatively high in fat with a content of 34 – 37% energy coming from fat. 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 implication on the potential incidence of CVD (cardiovascular disease).

²⁷ Lloyd, S., Madelin, T., Caraher, M (2008) *Report on schools and fast food outlets in Tower Hamlets: the school foodshed* (unpublished). Centre for Food Policy, City University, London.

When this information on 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. However it is possible to make small changes that make the diet healthier. To demonstrate this we have substituted one food in one of the meals used in the model above meal for an acceptable, but healthier option, which is substituting boiled rice for egg fried rice. By taking this action it is possible to reduce the average fat intake by 3g/ day and to reduce the energy contribution from fat to a healthier 31%.

Table 6. Contribution fast food meals (for three meals) in a week to the energy requirement of one family member (analysed against female and male Estimated Average requirement for energy) with one ‘unhealthy’ food substituted for a ‘healthier’ food.

	Energy Kcal (av.)	% EAR	Fat g (av.)	% energy from fat in the fast food meal (av)	Saturated fat g (av.)	% energy from saturated fat in the fast food meal (av)	Salt g
Girl -14 years	2940		100.1	31	34.3	10.5	8.1
Boy - 14 years	2940		100.1	31	34.3	10.5	8.1

While we have used older children here for our calculations in this work, the findings are equally as transferable to adults. The average man requires 2,550 Calories per day, and the average woman 1,940 Calorie per day. Three small fast food meals contributing 464 Calories on average to intake per day would contribute 24% energy for the woman and 18% energy for the man.

Table 7: Contribution of one portion of chicken wings and chips a week to the energy requirement of 14 year old boy and girl (analysed against female and male Estimated Average Requirement for energy)

Chicken wings and chips - three times a week								
		Energy Kcal (av.)	% EAR	Fat (av.)	% energy from fat in the fast food meal (av)	Saturated fat g (av.)	% energy from saturated fat in the fast food meal (av)	Salt g
Person 1	girl -14 years	2443		122.5	45	32.2	12	2.7
Person 2	boy - 14 years	2443		122.5	45	32.2	12	2.7

We know from previous work²⁸ that some children from some families buy fried chicken wings on the way home from school as a ‘top-up’ between lunch and evening meal. The cost of two chicken wings and a small portion of chips is £1.50 in the area. Children regularly buy this type of meal more that once a week. From the data in Table 6 it is clear that this meal, if eaten three times a week, can add 349Cals to the average daily calorie intake, 2443 Calories per week. This represents as much as 19% daily food energy for a girl and 16% daily food energy for a boy.

²⁸ Lloyd, S., Madelin, T., Caraher, M (2008) *Report on schools and fast food outlets in Tower Hamlets: the school foodshed* (unpublished). Centre for Food Policy, City University, London.

Fat is concentrated source of energy and it is easy to eat a large number of Calories in a small amount of food. Fat accounts for 45% of all Calories in these meals. The saturated fat content of the meals is also of concern, each £1.50 meal contributing 12% Calories as saturated fat. Our point here is that fast food in Tower Hamlets is not only contributing to the relative risk of 'at risk' members of the population developing both coronary heart disease but also contributing to the risk of them becoming overweight / obese.

Discussion

Physical access to shops in Tower Hamlets would appear to be adequate with 76% of household within 10 minutes walk of a supermarket, retail market, bakers or greengrocers. Nearly all (97%) of households were within a similar distance of a grocery store, although it appears that only that some 'grocery' store would only carry a very limited range of healthy food as was shown by our use of the proxy measure of the availability of 5 fresh fruit and 7 fresh vegetables. Also this should be contrasted with the finding from the mapping that 97% of households are within 10 minutes walk of a FFO. This shows that the issue of availability and the creation of a healthier retail local economy is dependent on the issue of access, acceptability and affordability. Many measures do not go beyond the simply issue of number of shops vis-a-vie retail outlets.

Thus it would seem reasonable to suggest that Tower Hamlets has a high concentration of junk food outlets. As noted above, some studies have suggested that FFOs are concentrated in more deprived areas²⁹ and given the levels of deprivation in Tower Hamlets this might be highly pertinent and along with its small geographical size a reason why there are not concentrations in smaller areas within the borough. All this is contributing to the growth of inequalities. The School Food Trust (SFT) as part of its Temptation Town (SFT, 2008) research produced a measure of the ratio of junk food outlets to secondary schools. It (the SFT) published some findings on the number of fast food outlets (FFOs) in and around schools, devising an index of schools to fast food outlets (including confectionary shops) and ranking local authorities on this basis. It did not produce a figure specifically for Tower Hamlets but it was included in the inner London group of councils. While admittedly a crude index and lacking discrimination it does raise the issue of the wider food environment. There was no figure for Tower Hamlets which was grouped with Hammersmith and Fulham, Kensington and Chelsea, Westminster, Camden, Islington, City, Hackney, Southwark, Lambeth, Wandsworth, Lewisham and Greenwich to provide an index of 36.66, i.e. 36 outlets per secondary school. The national average was 23 outlets per school, with an urban average of 25 outlets per school and for London 28. The SFT report did not map FFOs in relation to their proximity to schools or do any empirical work. Our estimates of the index for Tower Hamlet is that there are 627 FFOs, newsagents and groceries providing a ratio of 41.8 which compares to School Food Trust average ratios of 38.6 for the UK 10 worst areas, 36.66 for Inner London and an overall average of 25 outlets per school. To produce the Tower Hamlets figures, premises selling junk food were taken to be registered food premises

²⁹ Cummins S, McKay L & MacIntyre S, (2005) McDonald's Restaurants and Neighborhood Deprivation in Scotland and England; *Am J Prev Med* 2005;29(4): 308–310.

categorised as take away, grocery/mini market, supermarket, sandwiches/snacks/confectionery and newsagents whilst secondary schools were taken to be all state funded mainstream secondary schools. This could be potentially be underestimating the number of junk food outlets as a number of food premises classed as off licences will be selling sweets and confectionery and many operate in a similar fashion to grocer/mini markets. Additionally some essentially take away premises may be classified as restaurants if they have a table leading to potential further under counting.

Tower Hamlets is spatially the smallest London borough covering 15 sq miles and has reasonable public transport links i.e. rail, underground, light railway, buses and river bus. A 2005 study in Glasgow found that those living in poorer areas were not more likely to be exposed to out-of home eating outlets in their neighbourhoods.³⁰ They went on to say that health policies need to be based on 'empirical evidence about the location of fast food outlets in specific national and local contexts rather than on popular 'factoids'. Yet the same core team (Cummins and Macintyre) in 2007 found for a concentration effect of FFOs in deprived areas³¹ as did some long-term work in Melbourne.³² Here we find not a concentration in areas or around schools but across the whole of the borough. Although at a macro-level Tower Hamlets has higher concentrations of unhealthy food outlets our findings do not reflect this at a micro level. This number of FFOs undoubtedly contributes to the obesogenic environment. Here the 'local context' as set out by Macintyre and colleagues¹³ relates to an understanding of the local area. Not the least of this were the findings from a recent report for Tower Hamlets which found that parents wanted and were aware of the following:

- Stop children going to shops on school breaks.
- Stop children leaving school at lunch, coupled with healthy food and drink choices
- Planning controls to limit supply of fast food outlets – especially close to schools.
- Concerns about the cheapness of unhealthy food.
- Access to and availability of junk (and other unhealthy) food.
- Were aware of the loss of social status – with healthy eating being seen as 'uncool'.
- That socialising with friends at fast food restaurants (especially older) was important.
- That young people enjoy the taste/'fix' of junk food.³³

As well as showing that FFOs are not concentrated in the most deprived areas (relative that is to the rest of Tower Hamlets as compared to nationally it is all a deprived area), nor are they concentrated around schools. All this may be a product of the spatial compactness of Tower Hamlets. In Tower Hamlets pupils have ample opportunities (97% of households are within 10 minutes walk of a takeaway) to visit FFOs

³⁰MacIntyre, S., McKay, L., Cummins, S. and Burns C (2005) Out of home food outlets and area deprivation; case study in Glasgow, UK. *International Journal of Behavioural Nutrition and Physical Activity*, **2**, (16), pp .

³¹ Macdonald, L., Cummins, S. and Macintyre, S. (2007) Neighbourhood fast food environment and area deprivation-substitution or concentration? *Appetite*, **49**, pp 251-254. ?

³² Reidpath, D.D., Burns, C., Garrard, J., Mahoney, M. and Townsend, M. (2002). An ecological study of the relationship between social and environmental determinants of obesity. *Health & Place* **8**, (2), pp- 141-145.

³³ Barkers (2008) Social Marketing Tackling childhood obesity in Tower Hamlets Final report.

when traveling to and from school, so the commercial imperative to cluster around schools may be less. It is also a feature of what is called the 'business of location' where location in deprived area brings with it its own costs such as a lack of passing trade, higher costs and safety issues from crime and disorder. In addition although there is not a concentration there does appear to be some clustering of FFOs. The business and (behavioural) logic behind this is twofold, if you find a queue at one outlet you will go to the next premises; and areas become known for specialisation such as 'Banglatown' in Bethnal Green.

Takeaway outlets tend to be located along the main thoroughfares in the borough. The London Borough of Tower Hamlets new spatial planning strategy (2008) may have as a key objective the need to strengthen town/neighbourhood centres in Tower Hamlets (this is one of two options not yet decided upon although it is supported by the PCT). If adopted this may well lead to the implementation of some form of zoning for planning purposes. Samia Mair and colleagues (2005)³⁴ have examined how zoning laws might be used to combat obesity in the USA. Whilst the legislative system is somewhat different this is something that merits further consideration in the context of UK planning laws. Currently they do allow regulation where there is an over concentration of premises of certain use classes. However this is usually used in an effort to curb anti social behaviour and litter rather than promoting health. The proposed changes to town centre planning do not specifically address take-aways but do include a section on impact assessment and food which states that '*[T]here will be a benefit to people on lower incomes through improved access to good quality fresh food and other local goods and services at affordable prices. This is because the new impact test will better promote consumer choice and retail diversity helping to control price inflation, improving accessibility and reducing the need to travel*'. In addition there is a proposal in the reforms of PPS6 for the use of the concept 'lack of need' (this could be seen within the context of over provision) to restrict and reject planning permission. All this is based on the notion of a proper assessment of the area taking into account economics, retail, the views of citizens and the health outcomes.

In respect of this latter point the findings from the Social Marketing report³⁵ clearly highlights that parents in the borough were disturbed by the number of FFOs. There is some potential to use regulation such as PPS6 and the role of consultation with local communities to determine their view of the urban landscape.³⁶ This can be done through the agency of local area agreements and impact assessment both provided for in the reforms to PPS6³⁷ and its focus on broader aspects such as social and environmental impacts; although it is disappointing that health is not mentioned specifically. There is an emphasis on consumer choice and especially that of socially excluded groups, which such work might be included under. There is also a proposal for assessing impacts on the basis of type of outlet. This latter aspect is already implemented by a number of local authorities. The 2005 review of Use Classes Order made a distinction between restaurants and cafés (the new A3 class) and hot food take-aways (A5 class). This allows retail planning and zoning to

³⁴ Samia Mair J, Pierce M & Teret S, (2005) *The Use of Zoning To Restrict Fast Food Outlets: A Potential Strategy To Combat Obesity*; accessed 30/09/08 at <http://www.publichealthlaw.net/>

³⁵ Barkers (2008) *Social Marketing Tackling childhood obesity in Tower Hamlets Final report*.

³⁶ National Institute for Health and Clinical Excellence (2008) *NICE public health guidance 9 Community engagement to improve health*. NICE, London.

³⁷ Communities and Local Government (2008) *Proposed changes to Planning Policy Statement 6: Planning for Town centres Consultation. July 2008*. Communities and Local Government, Yorkshire.

be based on these categories. So for example Leicester City Council has introduced supplementary planning guidance which states that no more than 20% of the frontage of any side of a street is allowed to be used for fast food (the A5 class) use. Waltham Forest, in London, has introduced similar guidance to ensure retail protection and balance of use, with the criteria flexible to take account of developments in different centres in the borough. The London Borough of Westminster has identified 'stressed areas' where new fast food openings are resisted and they use a joint planning/licensing approach. Knowsley PCT in Merseyside are about to introduce similar restrictions through the Local Area Agreement where the Director of Public Health is a joint appointment. These approaches might be best categorized as facilitative in aiding local authority planners and public health practitioners adapt to local situations. Whatever the outcomes to the reformed PPS6 there appears to be a role for individual local authorities to devise by-laws or to introduce supplementary guidance to aid the planning process.

The use of public health 'law' is well established in controlling the availability of items such as alcohol, tobacco and more recently fast food.³⁸ In the UK the approach tends to be a 'round-about' one as FFOs are tackled not for the health issues but because of crime and disorder or spatial planning. There are a number of ways such an approach to planning could be adopted and put into practice. Planning can adopt the approach of using incentives, performance or conditional zoning.³⁹ These essentially set up different models of operation to achieve the end outcome of healthier options. In Tower Hamlets the private landlord in Canary Wharf has adopted a conditional zoning approach on the basis of use of premises and food sold. Incentive zoning might be used to encourage the development of areas and or outlets. So street food with an ethnic development can be seen as contributing to an area and helping develop areas of specialisation. Performance zoning takes account of the effects of land use on the local area and community. Specific ways of achieving the above include:

- Banning FFOs and/or drive through outlets.
- Banning 'formula' outlets.⁴⁰
- Bans in certain areas.
- Quotas in certain areas either by number or shop frontage,
- Quotas specifying density
- Directives specifying distance from schools, hospitals etc.

Internationally Los Angeles has banned the opening of FFOs in certain areas for a year.⁴¹ Cities such as New York have banned trans-fats from fast food.⁴² The Los Angeles initiative is an anti-obesity measure as they found that there was a concentration of FFOs in poor areas. These later initiatives as well as being anti-obesity measures are also designed to address the issue of widening inequalities.

³⁸ Ashe, M, Jernigan D, Kline R, And Galaz R (2003) Land Use Planning and the Control of Alcohol, Tobacco, Firearms and Fast Food Restaurants. *American Journal of Public Health*, 93, (9), 1404-1408.

³⁹ Samia Mair J, Pierce MW and Teret SP (2005) *The use of Zoning to restrict Fast Food Outlets: A Potential Strategy to Combat Obesity*. The Centre for Law and Public Health, Johns Hopkins University

⁴⁰ Formula can be defined broadly to include local take-ways that have one or more outlets or narrowly to include only larger national chains.

⁴¹ Reuters Los Angeles City Council passes fast food ban, available on <http://www.reuters.com/article/healthNews/idUSCOL06846020080730> Accessed 29/8/08

⁴² New York City Department of Health and Mental Hygiene Healthy Heart Avoid trans Fat available on <http://www.nyc.gov/html/doh/html/cardio/cardio-transfat.shtml> Accessed 29/8/08

The point here 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 choice.
4. The lack of owner awareness of the problem.

There is a long tradition of what are called ‘street foods’ and 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, and in many cases such outlets can perform a useful function in terms of creating distinctiveness. The nutrition impacts of such standardisation and use of processed ingredients and items such as ready made sauces are an increase in the fat, salt and sugar content of these foods compared to those prepared individually with possible long term consequences for health burdens. Tinker⁴³ in her study of street foods shows that the poor spend more (relatively) on street foods and have a higher calorific intake from these sources than those on high incomes. Research from Accra in Ghana shows that the lowest quintile groups consumed up to 31% of their total calories outside the home. Far being a luxury they cannot afford, street and fast food are important in freeing up time for income generating work among the poor.⁴⁴ So fast and take-away food should not be demonised and the concept of ‘street food’ as a feature of taste and ethnicity presents another way of rebranding and providing an outlet for small and medium enterprises. This may be important in the light of 2012 Olympic developments. At a time of immense changes in the global and national food situation we are seeing changes occurring in the patterns of eating out. Middle income consumers are now eating out less and buying fewer luxury goods but buying luxury or niche foods for occasions, this has seen a reduction in people buying specialty chocolate but an increase in sales of Cadbury’s chocolate. For those on low incomes there has been an increase in eating out from FFOs, as food prices increase and fuel cost many find it makes more sense to buy from a FFO as the squeeze on the household budget bites. Given the lack of healthy options and the calorific and presence of trans fats in the fast food on offer all this points to the danger of this contributing to an increase in the inequality gap.

The WCRF report recommends that fast foods be consumed ‘sparingly, if at all’ due to the energy density and portion sizes of such foods. In the US the energy from soft drinks, fast foods, and salty snacks doubled between 1977 and 1996, and soft drinks now provide 8.5 per cent of total energy in young people’s diets.⁴⁵

⁴³ Tinker, I. (1997) *Street foods: Urban Food and Employment in developing countries*. New York; Oxford University Press

⁴⁴ Maxwell, D., Levin, C., Armar-Klemesu, M., Rule, M., Morris, S. And Ahiadeke, C. (2000) *Urban Livelihoods and Food and Nutritin Security in Greater Accra, Ghana*. Research Report no 112. Washington C; International Food Policy Research Institute.

⁴⁵ World Cancer Research Fund / American Institute for Cancer Research. (2007) *Food, Nutrition, Physical*

If fast food accounts for more than 20% of food intake then it is likely that there will be deficiencies in diet –due to the high fat and saturated fat content and lack of micro-nutrients of fast-food.

Nutrients that have been cited as being linked with chronic diseases include salt (sodium), fat especially saturated fats and trans fats; and refined sugars. This 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. The coronary heart disease (CHD) standardised mortality ratio (SMR) for Tower Hamlets is 167.8, the highest SMR for CHD in London. Obesity is also an issue with more than 20% population is obese and 37.5 % of the population being overweight. While these levels are lower in comparison with levels for England they are still higher than desirable, however the trend is of a decrease in both measures which is encouraging.

The front-of-pack labelling signposting breakdown, green, amber, red, indicates that the fast foods that were analysed for this report have a medium or high salt, fat, and saturated fat. The selection of fast food outlets and foods to be sampled was random and there is no reason to suppose that food from other outlets does not have a similar profile. We tested this by sampling chips and rice at more than one outlet, the result was a similar profile of the chips and rice in each outlet tested. This information can be used not only as an information resource for Tower Hamlets but also as a tool to support consumers and proprietors to understand the nutrient content of their food.

Given the incidence of obesity in Tower Hamlets and the propensity for children and young adults to eat more fast food, and therefore a have a proportionally higher energy intake from this food, we concerned ourselves with the energy content of the food.⁴⁶ Particularly the energy derived from fat, and particularly saturated and trans fats. At a national level FSA are working toward improving customer awareness, encouraging promotion, and uptake of healthier options, encouraging accessibility to small portion sizes and encouraging reformulation of products. All of these with the aim of decreasing the energy density and saturated fat content of food.

Our findings suggest that the type of FFO and the food on offer can affect the dietary health of the local population. One aspect to this is the labeling and information available in such outlets; another is the type of food on offer. The provision of nutrition information is something that the Food Standards Agency are committed to tackling in the near future (this has already happened in areas like New York where food service outlets with a certain number of outlets now have to provide nutrition information on their displays and menus. Many of the big companies already provide this information on their websites. While compulsory nutrition information on menus is one way forward the other is product reformulation, where manufacturers make healthier options available and choice is edited without the consumer even noticing.

Activity, and the Prevention of Cancer: a Global Perspective. Washington DC: AICR.

⁴⁶ Prentice, A.M., Jebb, S.A. (2003) Fast foods, energy density and obesity: a possible mechanistic link. *Obesity Reviews.* 4:4: 187 -194.

Yet another approach can be found in new methods and technologies some simple some sophisticated. The New Zealand programme of ‘triple shake’ encouraged chip shops to do three shakes of chips coming from the fryer and this resulted in up to a 15% reduction in fat content of the chips. It was pleasing to read that operators of fast food outlets were ready to change and that the main barrier was knowledge.⁴⁷ These principles have considerable value and could be applied by Tower Hamlets at a local level to address the same aim.

Although this report has focused on energy and fat content, product reformulation could also address salt content. Later in this discussion we give examples of schemes that have been developed to support catering outlets to make the food they serve healthier.

It is generally accepted that weight gain associated with fast food intake is due to the relative energy density of these foods⁴⁸. Our study suggests this might be the case for the population of Tower Hamlets as the lack of healthy options shows and the energy density of the food on sale. More important than causation is whether interventions to change dietary behaviour have an impact at a community level. It is possible to make improvements to risk factors such as levels of blood lipids (fats) and blood pressure; and changes tend to be more pronounced in individuals who are told that they are at risk of heart disease or cancer. Population based observations and cohort studies suggest that changes in diet can impact on coronary heart disease. While it is agreed that more evidence is needed to provide conclusive proof that primary reduction of blood lipid levels, through diet, leads to a reduction in the incidence of strokes and heart attacks, it is established³¹ that adoption of a healthy diet is preferable to long-term medication in the general population in order to prevent or delay the onset of disease and to reduce the burden on health services. The best available evidence in this area is a case for action and the regulation of FFOs.

Our observations in the FFOs raise concerns about young men’s consumption. This observation is backed up by other work on how young men from ethnic backgrounds use FFOs.⁴⁹ There are many reasons for this, some are skills related (lack of cooking knowledge), health literacy (seeing no link between diet and health outcomes such as type 2 diabetes), others to do with culture (Halal chicken) and yet others related to financial independence.

There is strong evidence for those in the community who already have cardiovascular disease, a systematic review of the evidence in 2006⁵⁰ made two related conclusions, a reduced saturated fat intake and

⁴⁷ Morley-John, J., Swinburn, B.A., Metcalf, P.A., Raza, F., Wright, H. (2002). The Risks of Everyday Life: Fat content of chips, quality of frying fat and deep-frying practices in New Zealand fast food outlets. *Australian and New Zealand Journal of Public Health*. 26: 101 -107.

⁴⁸ World Cancer Research Fund (2007) *Food, Nutrition, Physical Activity, and the prevention of Cancer: a global perspective*. Washington DC, American Institute for Cancer Research.

⁴⁹ Vaughan, L (2008) *Food choices and British Bangladeshis living in Tower Hamlets East London: an intergenerational study of the factors influencing food choices and the nutrition transition*. Unpublished PhD thesis, Centre for Food Policy, City University

⁵⁰ A. Mead, G. Atkinson, D. Albin, D et al (2006) Dietetic guidelines on food and nutrition in the secondary prevention of cardiovascular disease – evidence from systematic reviews of randomized controlled trials (second update, January 2006). *Journal of Human Nutrition and Dietetics*. 19:6: 401- 419.

substitution of saturated fat with unsaturated fat reduces cardiovascular disease events if followed for 2 or more years; and 'lipid lowering diet' reduces the risk of stroke. Our study shows that the FFOs can make a negative contribution to both the fat and saturated fat intake of young people and particularly to young men in Tower Hamlets. However we have also shown that in making small and acceptable changes to dietary choices that individuals can improve their own diets. However the issue is not just about individual diets and choice it is as we have written also about the food outlets and the suppliers. There is a potential to intervene at a more structural level in the food chain e.g. at the point of food formulation or manufacture.

Historically schemes have been developed to support food outlets, fast food or other types of outlet, to improve the nutrient profile of the food that is on offer; the most well known of these was the Heartbeat Award scheme. There has been some criticism of this award because it was possible to obtain it by making only small changes to menus. To overcome this weakness new schemes have been devised, one of which is the Healthy Options Award.⁵¹ This scheme focuses on the holistic promotion of 'healthy eating' including the reduction of fat, saturated fat, and salt in meals provided at food outlets by supporting them to take the following actions:

To reduce fat

- Increase the availability of appropriately stored and prepared fruit and vegetables
- Reduce the amount of fat used in the preparation of meals by, for example
 - Avoiding frying if possible
 - Avoiding the use of frozen chips
 - Frying food with fat at the correct temperature
 - Using breadcrumbs instead of batter
- Making alternatives to fatty food available e.g. having baked potatoes available as well as chips

To reduce saturated fat

- Reducing the amount of saturated fat used in the preparation of meals by, for example
 - Ensure frying temperatures are correct
 - Change cooking oil frequently
 - Avoid using products that contain 'hydrogenated' fats
 - Use lean meat products when possible

To reduce salt

- Make salt less accessible to customers e.g. keeping it under the counter
- Provide salt in sachets, a measured portion

⁵¹ Chartered Institute of Environmental Health (Wales) available on http://www.cardiff.gov.uk/content.asp?Parent_Directory_id=2865&nav=2870,3142,3991,4990 Accessed 3/10/2008

The regulation of trans-fat described previously is being implemented by banning the use of hydrogenated vegetable oils, shortenings, or margarines unless the produce label proves that it contains less than 0.5g trans fat per serving.

All of the above examples of improving the nutrient profile of food from fast food outlets rely on working with the individual food outlets. This work dovetails with the national programmes led by FSA (UK).

What becomes apparent is that there are multiple approaches to the problem ranging from working with manufacturers and owners of FFOs to regulating FFOs in terms of labeling, opening hours and location what is needed is both work with such establishments and more structural approaches to develop the local environment.

While the approach described above will help to address the issues around sat and sugar in addition to energy and fat, we do recognise the need for wider initiatives to improve the micro nutrient density of diets, and particularly diets of children and young adults. As such we recognise the importance of wider community interventions to improve nutrition skills and knowledge.

KAY WANTS TO ADD IN JAMIE / FARIDA'S TABLE AND DISCUSS

PUT IN APPENDIX, some are incomplete and not quite up to date we have a new analysis in the text above.

Whilst this report has focussed on access to food, diet and obesity it is also important to recognise a need to look beyond food as fuel, dietary requirements and nutritional values. The cultural significance of food and eating focussing on social values, meanings and beliefs should not be overlooked particularly when working with local communities to improve diet. These areas are traditionally the domain of anthropology which for example considers the body as an active agent linked to identity and difference, age, class, gender and ethnicity, all of which are highly pertinent to the residents of Tower Hamlets.

Recommendations

Develop more proactive approaches to the opening of FFOs in the borough through the mechanisms mentioned above but starting with the Local Area Agreement. Use a joint approach in the borough through zoning, usage (as in Use Classes Order) and incentives to the location and type of FFOs. Allied to this introduce supplementary guidance to aide communities, planners and the owners of FFOs.

Work with owners of FFOs especially the small and independent chains (support an award scheme – EHOs are considering this approach). Currently the PCT are commissioning EHOs to add on time to each visit to retailers, caterers, fast food outlets, and delis to assess the level of healthy foods on offer. If there is an issue the business will be referred to the public health dietitian. This scheme should address:

- Menu labeling including the possibility of working on a local traffic light scheme
- Availability of health options for example the same product e.g. chips but prepared in a

healthier way

- Trans fats in the menu/food
- Extend healthy eating work to those who own and work in FFOs. This should include work with manufactures to reformulate products used in FFOS such as prepared sauces and pies.
- Develop locally policy with respect to menu planning. The borough takes the lead on menu labeling (dietary and sourcing) and introduce support mechanisms for the food service sector to enable this. In preparation for the 2012 Olympics.
- Reward the availability of healthy options in FFOs.
- More work with FFOs and the food service sector on use of fat, particularly saturated fat and salt in food.
- On-going dietary monitoring of take-away food to be carried out.
- Link to the FSA approach – possibly signposting of FFO food link to regional officer FSA
- Businesses that are failing can be referred to the business advisory centre

Any award scheme that is introduced should reward fast food outlets that make changes so that the menu is healthier but it should not add significantly to the costs of running the fast food outlet.

If a decision needs to be made about resource allocation we would recommend that actions are directed initially to retail outlets close to schools.

Continue to publicise the impact that eating from FFOS has on dietary intake. Encourage the move from fast-food to ethnic street foods which can be healthy and have a market niche. In preparation for the 2012 Olympics.

The borough takes a stand on trans-fats and works towards all food in food service outlets containing zero trans-fats. This could be extended to be a cross- London initiative and be linked to the 2012 Olympics,

Continue to support and develop work with families via appropriate fora e.g. schools to modify knowledge and FFO behaviour. In a previous paper⁹ we have made recommendations about working with individuals and families that we will not repeat here. In particular we would want to see the continuation of programmes that provide knowledge and skills to improve diet overall.

Add in sourcing for the Olympics

Tower Hamlets PCT Fast food outlets
Activity observation

Date of observations:

Time of observations:

Fromam/pm - To..... am/pm

Names of fast food outlet observed

What type of fast food outlet is the one that you are surveying?
Do you notice anything specific about the fast food outlet Any healthy food promoted? Anything else?

1. Profile of the purchaser

Who is using the fast food outlet?

Please make one mark in a 5 bar gate for each person you see using the FFO

Purchaser	How many people does the customer appear to be buying for?			
	1	2	3	3+
School aged person 12 – 18 years				
Young adult 19 – 25 years				
Older adult 26 years – 64 years				
Senior citizen – 65 years plus				

2. Profile of the family

If the purchaser is with their family please record the profile of the family

Please also note **which person is making the food choice**

Please take pictures of the take-away from the outside and also pick-up a menu if one is available

3. Menu

Please write out the menu if you cannot pick one up or photograph it

Please write down the food and how much it costs

Please record healthy options in the table below

Food	Price	Food	Price	Food	Price

Are there any healthy options?

Please write down what they are and how much they cost

Food	Price	Food	Price	Food	Price

Which of the following condiments are supplied by the FFOs?

Salt	
Vinegar	
Sauce Tomato	

Are fizzy drinks available?

Please record which ones

Name of drink	Brand	Diet	Non- diet
e.g. Cola	Coke	Yes	

4. Environment

How much litter is outside the premises?

None	
A little	
A lot	

Are there queues in the FFO

Always	
Sometimes	
Never	

Thank you for completing this questionnaire

Date of observation:

Name of shop				number of shop							
Address of shop											
Postcode											
Is there anything of not about the store – What type of store is it?											
Is anything particularly prominently displayed – healthy / unhealthy?											
Is anything promoted – healthy / unhealthy choices											
Anything else that you noticed?											
Is there anything of note about the store – What type of store is it?											
Does the shop stock the following items?											
Crisps	Y	N	Sweets	Y	N	Chocolate	Y	N	Cans of drink (non- diet)	Y	N
Sandwiches					Pies etc hot				Indian type samosas etc		
Fruit	Y	N	Qal	How many types of fresh fruit?			Vegetables	Y	N	Qal	How many types of fresh vegetables?

Name of shop				number of shop			
Address of shop							
Postcode							
Is there anything of not about the store – What type of store is it?							
Is anything particularly prominently displayed – healthy / unhealthy?							

Appendix B

Is anything promoted – healthy / unhealthy choices												
Anything else that you noticed?												
Does the shop stock the following items?												
Crisps	Y	N	Sweets	Y	N	Chocolate	Y	N	Cans of drink (non- diet)	Y	N	
Sandwiches					Pies etc hot					Indian type samosas etc		
Fruit	Y	N	Qal	How many types of fresh fruit?				Vegetables	Y	N	Qal	How many types of fresh vegetables?

APPENDIX C

NUTRIENT CONTENT OF FOUR MEALS

One fast food meal per week (Pizza)		Energy Kcal	% EAR	Fat g	% energy from fat in the fast food meal (av)	Saturated fat g	% energy from saturated fat in the fast food meal (av)	Salt g
Person 1	girl - 14 years (EAR 1845 Calories)	525	28	21	36	11.2	19	1.7
Person 2	boy - 14 years (EAR - 2220 Calories)	525	24	21	36	11.2	19	1.7

cod (small) and chips		Energy Kcal	% EAR	Fat g	% energy from fat in the fast food meals (av)	Saturated fat g	% energy from saturated fat in the fast food meals (av)	Salt g
Person 1	girl - 14 years	1197		49.7	37	20.3	15	2.2
Person 2	boy - 14 years	1197		49.7	37	20.3	15	2.2

chicken chow mein and egg fried rice		Energy Kcal	% EAR	Fat g	% energy from fat in the fast food meal (av)	Saturated fat g	% energy from saturated fat in the fast food meal (av)	Salt g
Person 1	girl - 14 years	1526		52.5	31	5.6	3	11.5
Person 2	boy - 14 years	1526		52.5	31	5.6	3	11.5

Chicken wing and chips		Energy Kcal	% EAR	Fat g	% energy from fat in the fast food meal (av)	Saturated fat g	% energy from saturated fat in the fast food meal (av)	Salt g
Person 1	girl - 14 years (EAR 1845 Calories)	812	44	40.6	45	10.5	12	0.9
Person 2	boy - 14 years (EAR - 2220 Calories)	812	37	40.6	45	10.5	12	0.9