

## **An Assessment of the Nutritional Adequacy of Children's Meal Provision in Restaurants**

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## **Executive Summary**

This report gives the findings of a nutritional assessment of various children's restaurant menus collected in November 2003.

141 meals from 15 establishments in Greater London were analysed for nutritional composition and compared with Caroline Walker Trust (CWT) guidelines for single school meals.

As a rule, meals were high in fat, saturated fat (SFA), low in carbohydrate, non-starch polysaccharides (NSP) fibre, and micronutrient poor with the exception of sodium. In some cases meals breached guidelines considerably. For example, some meals provided more than twice the recommendation for energy and four times more than the recommendation for fat and SFAs. A number of meals were not only found to be low in certain micronutrients, but, in fact, absent entirely of a number of trace elements such as folate, vitamin C and A. When the sodium content of meals was compared to the recommendations set by the Committee on Medical Aspects of Food Policy (COMA), some meals were found to provide double, or close to double the daily recommendation for children aged 7-10 years. For children aged 4-10 years, a number of meals were nearly three times the Reference Nutrient Intake (RNI).

### *Key Findings*

- 57% and 37% of meals exceeded the guideline for energy (kcal) for 5-6 years and 7-10 years respectively.
- 72% of meals exceeded the guideline for total fat (g) for 5-6 years and 57% for 7-10 years.
- 81% of meals exceeded the guideline for fat as a percentage of total food energy.
- 54% of meals exceeded the guideline for SFAs (g) for 5-6 years and 50% for 7-10 years.
- 54% of meals exceeded the guideline for SFAs as a percentage of total food energy.
- 73% and 82% of meals were low in carbohydrate (g) for 5-6 years and 7-10 years respectively.
- 87% of meals did not meet the guideline for carbohydrate as a percentage of total food energy.
- When meals were analysed with the addition of a drink and/or dessert they were found to exceed the guideline for non-milk extrinsic (NME) sugars (g) and as a percentage of total food energy.
- 48% of meals did not meet the guideline for NSP (g) for 5-6 years and 65% for 7-10 years.

- 60% and 82% of meals did not meet the guideline for iron (mg) for 5-6 years and 7-10 years respectively.
- 70% of meals did not meet the guideline for calcium (mg) for 5-6 years and 79% for 7-10 years.
- 67% of meals did not meet the guideline for vitamin A ( $\mu\text{g}$ ).
- 37% and 66% of meals did not meet the guideline for folate ( $\mu\text{g}$ ) for 5-6 years and 7-10 years respectively.
- 45% of meals did not meet the guideline for vitamin C (mg).
- 78% of meals did not meet the guideline for zinc (mg).
- 37% of meals exceeded the guideline for sodium (g) for 5-6 years and 8% for 7-10 years.

Key conclusions were that the foods on offer to children were generally limited in choice and variety, processed and with an almost complete lack of fruit and vegetables. In addition, there were incidents of misleading information promoting '*healthy*' choices.

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## **INTRODUCTION**

It is understood that childhood nutrition is important for immediate and long-term health and that eating out in the United Kingdom is increasing (Department for Environment, Food and Rural Affairs, 2002; Department of Health, 2002). In addition, there is current concern with the promotion and advertising of foods to children (All Party Parliamentary Group on Obesity, 2002; Consumers Association, 2004; Food Standards Agency, 2004). With this in mind, this study was carried out in order to make a nutritional assessment of children's menus in various types of eating establishments. This is the only quantitative study examining this particular source of food for children in the United Kingdom. The following provides an overview of the methods applied, key findings and implications.

## **SAMPLE AND METHODS**

141 meals from menus were examined from the study sample, which comprised of 15 establishments located in Greater London who all offered a separate children's menu from their general menu. The types of eating establishments have been classified into 5 different categories and 3 establishments were chosen for each category. Table 1 provided at the end of the Sample and Methods section shows the classification, chosen sample, and number of meals examined from each establishment.

### *Data Collection*

The Parent's Jury, The Food Commission, initially provided a number of menus for analysis. Each restaurant was then contacted and a menu requested in order to ensure the analysis would be based on the menu in use at the time, November 2003, ensuring that any seasonal variation between menus is held constant. Where menus varied on a daily/weekly basis, and no printed menu was available, the menu offered on the day the establishment was contacted was recorded. Once all the menus were received, in order to improve the accuracy of data, all restaurants were contacted by telephone and either the Chef or Restaurant Manager was questioned regarding portion sizes, ingredients and cooking methods. Where this was not possible another member of staff was questioned. For example, in the case of Fairlop Waters a waitress provided the information required. In the case of the David Lloyd, company details were sent with exact portion weights, cooking methods and ingredients for each item on the menu.

For each item on the menu the particular staff member were asked to provide details of ingredients (where appropriate), portion sizes, and cooking methods. In some cases exact weights were

provided, but for the majority, approximate quantities, such as a tablespoon of beans, or 2 fish fingers, were given. From these estimates of quantities the Food Standards Agency Food Portion Sizes (Food Standards Agency, 2002) was used for the purposes of conversion to weight (g). In the case of drinks conversion to weight was achieved using the multiplication by specific gravity. For example, 330ml of coke was converted to 343.2g by multiplying by its specific gravity of 1.040. In all cases cooking methods, such as fried, deep fried, grilled and oven baked, were recorded.

For a number of restaurants, Garfunkel's, Science Museum and Harvester, the children's meals came as a '*meal package*' and were sold at a certain price including a main meal, desert and in some cases a drink. For these meals the total meal package was examined. A number of the children's menus offer a choice of side orders and in these instances meals were analysed using various combinations of the side orders.

#### *Foodbase Analysis*

Each meal was analysed using the Foodbase (2000) programme. The meals were analysed for their nutrient composition and in addition for their fatty acid composition. The food tables that were applied for analysis were the McCance and Widowson's 5<sup>th</sup> Edition (Food Standards Agency, 2002).

#### *Analysis Using the Caroline Walker Trust Guidelines*

Once the nutritional composition of the meals had been provided from the Foodbase analysis, each meal was then examined for its nutritional quality using the Caroline Walker Trust Guidelines for School Meals (guidelines provided in Appendix 1). Tables were produced for the nutritional analysis of all meals provided in each establishment, and nutrients were identified if they were found to either not meet or exceed the specified guidelines for each age category (5-6 years and 7-10 years). From this initial analysis, the percentage of meals not meeting the guidelines in each establishment, category, and in total was determined.

<b>Table 1: Classification, establishments and number of meals under investigation in the present study</b>		
<b>Classification</b>	<b>Establishment</b>	<b>No. of Meals</b>
Family Establishments	Garfunkel's	14
	Beefeater	13
	Harvester	14
	<b>Total</b>	<b>41</b>
Places of Interest	London Zoo	11
	Natural History Museum	4
	Science Museum	6
	<b>Total</b>	<b>21</b>
Soft Play	Adventure Kingdom	5
	Play Town	20
	Whacky Warehouse	16
	<b>Total</b>	<b>41</b>
Stores	John Lewis	6
	Tesco	3
	Ikea	2
	<b>Total</b>	<b>11</b>
Leisure	David Lloyd	19
	Fairlop Waters	2
	London Borough of Redbridge Sports Centre	6
	<b>Total</b>	<b>27</b>
<b>Grand Total</b>		<b>141</b>

## RESULTS

### *Energy*

- Overall 57% and 37% of meals exceeded the guideline for 5-6 years and 7-10 years respectively.

The percentage of meals that exceeded the requirement was found to be highest within the family establishment classification, where 88% of meals were found to exceed the guideline for 5-6 years, and 71% for 7-10 years. 100% of meals exceeded the recommendations for 5-6 years in the cases of Harvester, Adventure Kingdom and Ikea. The following table provides examples of findings of energy compared to the guideline set by the Caroline Walker Trust.

<b>Table 2: Results of Energy (kcal) Provision in a Number of Establishments Compared with Recommendations</b>		
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (maximum)</b>	
	5-6 years	7-10 years
	<b>489</b>	<b>557</b>
Garfunkel's	967	
Harvester	1270	
Beefeater	819	
Whacky Wharehouse	970	
Adventure Kingdom	864	
David Lloyd	745	

### *Fats*

- With regard to total fat (g), from the total meals sampled, 72% of meals were found to exceed the guideline for fat for 5-6 years, and 67% of meals for 7-10 years.

This proved to be highest within the family establishment classification where 83% of meals exceeded the guideline for both age groups. 100% of meals exceeded the guideline for total fat in Adventure Kingdom, Tesco, Fairlop Waters and Redbridge Sports Club for both age groups. Table 3 identifies a number of establishments where the meal provision exceeds the recommendations for total fat.

<b>Table 3: Results of Total Fat (g) Provision in a Number of Establishments Compared with Recommendations</b>		
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (maximum)</b>	
	5-6 years	7-10 years
	<b>19.0</b>	<b>21.7</b>
Garfunkel's	51.8	
Harvester	80.1	
Beefeater	44.8	
Science Museum	39	
Adventure Kingdom	52	
Whacky Wharehouse	40.7	
David Lloyd	39.9	

- The guideline for fat as a percentage of total energy (based on 35% of estimated intake) was found to be exceeded by 81% of the total meals provided by the establishments.

This was shown to be highest within the stores where 91% of meals exceeded the guideline. Results indicate 100% of meals provided by the Natural History Museum, Adventure Kingdom, Tesco, Ikea, Fairlop Waters and Redbridge Sports Club were found to exceed the guideline. Table



4 provides a number of examples of results of the analysis of the fat as a percentage of total food energy in a number of establishments.

<b>Table 4: Results of Total Fat (g) as a % of Total Food Energy in a Number of Establishments Compared with Recommendations</b>	
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (maximum %)</b>
	<b>35</b>
Harvester	56.8
Adventure Kingdom	65
Playtown	65.1
Whacky Wharehouse	61.6
Fairlop Waters	58.7
David Lloyd	63.7

- In the case of SFAs, of the total meals analysed, 54% exceeded the guideline set for 5-6 years, and 50% for the 7-10 years age group.

This was found to be highest within the Family Establishment classification where 80% of meals exceed the guideline for the 5-6 years age group, and 78% for the 7-10 age group. 100% of meals provided by the Science Museum exceeded the recommendation for both age groups. Table 5 shows a number of examples of results of analysis for SFAs in a number of establishments.

<b>Table 5: Results of SFAs (g) Provision in a Number of Establishments Compared with Recommendations</b>		
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (maximum)</b>	
	5-6 years	7-10 years
	<b>6.0</b>	<b>6.8</b>
Garfunkel's	22.5	
Harvester	24	
Adventure kingdom	16.7	
Playtown	17.3	
Whacky Wharehouse	30.8	

- 54% of all meals were found to exceed the guideline for SFAs as a percentage of total food energy (based on 11% of estimated intake) and for a number of meals SFA content was double that of the recommendation.

This was shown to be particularly high within the family establishment classification where 71% of total meals exceed the guideline. 100% of the children's meals provided by the Science Museum exceeded the guideline for SFAs as a percentage of total food energy. The following table provides a number of examples of meals that were found to exceed the guideline.

<b>Table 6: Results of SFAs (g) as a % of Total Food Energy in a Number of Establishments Compared with Recommendations</b>	
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (maximum %)</b>
	<b>11</b>
Garfunkel's	34
Harvester	25.5
Science Museum	21.6
Playtown	29.6
Whacky Wharehouse	23.2

### *Carbohydrate*

- For the 5-6 years age group 73%, and 82% of meals for the 7-10 years age group, of meals were low in carbohydrate. This was a reflection of the high levels of fat in these meals.

This was shown to be highest within the stores classification where 100% of meals in each establishment did not meet the recommendation for both age groups. 100% of meals did also not meet the guideline for carbohydrate in London Zoo, Natural History Museum and Fairlop Waters for both age groups and the Science Museum for the 7-10 years age group. Table 7 highlights findings of carbohydrate provision in a number of meals provided in establishments in comparison with the Caroline Walker Trust guidelines.

<b>Table 7: Results of Total Carbohydrate (g) Provision in a Number of Establishments Compared with Recommendations</b>		
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (minimum)</b>	
	5-6 years	7-10 years
	<b>65.2</b>	<b>74.3</b>
Natural History Museum	32.1	
London Zoo	26.2	
Playtown	13.7	
Whacky Wharehouse	26.6	
John Lewis	28.1	
David Lloyd	11.7	

- Of the total meals analysed, 87% did not meet the guideline set by CWT for carbohydrate as a % of total food energy.

This proved to be highest within the Stores classification in which 100% of meals from each establishment did not meet the recommendation. 100% of the children's meals provided by the

Natural History Museum, Adventure Kingdom, Fairlop Waters and Redbridge Sports Club did also not meet the guideline. Table 8 provides a number of examples that illustrate this.

<b>Table 8: Results of Carbohydrate (g) as a % of Total Food Energy in a Number of Establishments Compared with Recommendations</b>	
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (minimum %)</b>
	<b>50</b>
Garfunkel's	21.6
Beefeater	21.1
Playtown	19.7
Whacky Wharehouse	20.9
David Lloyd	16.7

### *NME Sugars*

- Main meals were found to meet the guidelines for NME sugars. However when meals were analysed with the addition of a dessert and/or drink meals were found to exceed the guideline.

The following table provides examples of meals that exceeded the guideline.

<b>Table 9: Results of NME Sugars (g) Provision in a Number of Establishments Compared with Recommendations</b>		
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (maximum)</b>	
	5-6 years	7-10 years
	<b>14.3</b>	<b>16.3</b>
Garfunkel's	45.8	
Science Museum	19.1	

Table 10 illustrates several examples of the meals that exceeded the recommendation for NME sugars (g) as a percentage of total food energy.

<b>Table 10: Results of NME Sugars (g) as a % of Total Food Energy in a Number of Establishments Compared with Recommendations</b>	
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (maximum %)</b>
	<b>11</b>
Garfunkel's	31.5
Science Museum	16.9

## NSP

- Of the total meals analysed, 48% did not meet the guideline in the case of the 5-6 years age group, and 65% for the 7-10 years age group. Again, this is a consequence of the high fat/low carbohydrate content of meals.

This proved to be highest within the Places of Interest classification where 62% and 86% of meals did not meet the recommendation for the age groups 5-6 and 7-10 respectively. 100% of meals did not meet the guideline in the Science Museum, Adventure Kingdom and Fairlop Waters for both age groups, and Tesco and Ikea for the 7-10 age group. The following table provides examples of meals from a number of establishments compared to the NSP recommendations set by the Trust.

<b>Table 11: Results of NSP (g) Provision in a Number of Establishments Compared with Recommendations</b>		
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (minimum)</b>	
	5-6 years	7-10 years
	<b>3.9</b>	<b>4.5</b>
Garfunkel's	1.6	
Science Museum	1.2	
Natural History Museum	1.7	
London Zoo	1.5	
Playtown	0.4	

## Protein

- Protein provided in meals was adequate.

Table 12 gives examples of meals from a number of establishments in comparison with the protein guideline.

<b>Table 12: Results of Protein (g) Provision in a Number of Establishments Compared with Recommendations</b>		
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (minimum)</b>	
	5-6 years	7-10 years
	<b>5.9</b>	<b>8.5</b>
Natural History Museum	5.4	
Whacky Wharehouse	4.3	

## *Micronutrients*

### *Iron*

- 60% of total meals provided by the establishments did not meet the guideline for iron the 5-6 years age group, and 82% for the 7-10 years group.

This was shown to be greatest within the Places of Interest classification where 76% of meals for 5-6 years, and 100% of all establishments for the 7-10 years age group, did not meet the recommendation. 100% of meals for both age groups did not meet the requirement within Ikea and Fairlop Waters, and for the 7-10 years age group within Tesco and Redbridge Sports Club. Table 13 presents a number of findings from analysis for iron compared with the guideline.

<b>Table 13: Results of Iron (mg) Provision in a Number of Establishments Compared with Recommendations</b>		
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (minimum)</b>	
	5-6 years	7-10 years
	<b>2.4</b>	<b>3.5</b>
Beefeater	0.2	
Science Museum	0.98	
London Zoo	0.9	
Play Town	0.5	
Whacky Wharehouse	1.2	

### *Calcium*

- Results show that overall 70% of meals did not meet the guideline set for 5-6 years, and 79% of meals for 7-10 years.

This proved to be highest within the Stores classification where 91% of meals provided did not meet the guideline for the 5-6 years age group, and 100% of all meals offered in each establishment did not meet the requirement for the 7-10 years age group. In the cases of London Zoo, Fairlop Waters, John Lewis, Ikea and Redbridge Sports Club, 100% of meals provided did not meet the calcium guideline set for both age groups. In the case of Adventure Kingdom 100% of meals provided did not meet the recommendation for the 7-10 years age group. The following table presents a number of results from different establishments of the calcium analysis in comparison with the Caroline Walker Trust guideline.

<b>Table 14: Results of Calcium (mg) Provision in a Number of Establishments Compared with Recommendations</b>		
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (minimum)</b>	
	5-6 years	7-10 years
	<b>158</b>	<b>193</b>
Beefeater	18	
Science Museum	0.98	
London Zoo	30	
Playtown	30	
David Lloyd	34	

### *Vitamin A*

- Overall, 67% of the meals provided did not meet the guideline set for both age groups.

This was shown to be highest within the Leisure classification where 93% of meals did not meet the recommendation. 100% of the meals provided by Adventure Kingdom, Tesco, Ikea, David Lloyd and Fairlop Waters did not meet the guideline. Table 15 gives a number of examples of findings of Vitamin A analysis with the guideline provided for the purposes of comparison.

<b>Table 15: Results of Vitamin A (<math>\mu\text{g}</math>) Provision in a Number of Establishments Compared with Recommendations</b>		
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (minimum)</b>	
	5-6 years	7-10 years
	<b>150</b>	<b>150</b>
Beefeater	0	
Natural History Museum	5	
London Zoo	0	
Playtown	0	
Whacky Wharehouse	0	
Fairlop Waters	0	

### *Folate*

- In total, 37% and 66% of meals, did not meet the guideline for the 5-6 years and 7-10 years age group, respectively.

Results show that this was highest within the Places of Interest classification where 91% of meals did not meet the Folate guideline for the 5-6 years age group, and 76% of meals for the 7-10 years age group. 100% of meals provided by Adventure Kingdom and Fairlop Waters did not meet the

recommendation for both age groups. 100% of meals provided by Tesco did not meet the guideline for the 7-10 years age group. Table 16 provides a selection of results of the Vitamin A content of a number of meals provided, compared with the guideline set by the Trust.

<b>Table 16: Results of Folate (<math>\mu\text{g}</math>) Provision in a Number of Establishments Compared with Recommendations</b>		
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (minimum)</b>	
	5-6 years	7-10 years
	<b>40</b>	<b>60</b>
Beefeater	4	
Science Museum	7.4	
Natural History Museum	5	
Adventure Kingdom	3.6	
Playtown	0	
Fairlop Waters	2.4	

### *Vitamin C*

- Overall 45 % of meals did not meet the guideline for Vitamin C.

This was found to be highest within the Family Establishment classification where 56% of meals did not meet the guideline. 100% of meals provided by Fairlop Waters did not meet the guideline. The following table has been provided to show results of the analysis of a number of meals provided in a selection of establishments in comparison with the Caroline Walker Trust guideline for Vitamin C.

<b>Table 17: Results of Vitamin C (mg) Provision in a Number of Establishments Compared with Recommendations</b>		
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (minimum)</b>	
	5-6 years	7-10 years
	<b>11</b>	<b>11</b>
Garfunkel's	0.6	
Harvester	0.8	
Beefeater	0	
Natural History Museum	0	
London Zoo	0	
Playtown	0	
Whacky Wharehouse	0	

### *Zinc*

- Of the total meals provided in all establishments, 78% did not meet the guidelines for zinc.

This was found to be highest within both Places of Interest and Stores where 100% of all meals provided in all the establishments did not meet the recommendations. 100% of meals provided by Fairlop Waters did not meet the guidelines. Table 18 presents a number of results from the zinc analysis with the guideline provided for comparison.

<b>Table 18: Results of Zinc (mg) Provision in a Number of Establishments Compared with Recommendations</b>		
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (minimum)</b>	
	5-6 years	7-10 years
	<b>2.6</b>	<b>2.8</b>
Beefeater	0.7	
Natural History Museum	0.62	
London Zoo	0.72	
Playtown	0.55	
Whacky Wharehouse	0.53	

### *Sodium*

- Of the total meals analysed 37% exceeded the guideline set for sodium for the 5-6 years age group, and 8% for the 7-10 years age group.

Results show this to be highest within the Family Establishment classification, where 49% of meals exceed the guideline for 5-6 years, and 15% of meals for 7-10 year. The following table gives a selection of results from sodium analysis compared with the Caroline Walker Trust guideline.

<b>Table 19: Results of Sodium (g) Provision in a Number of Establishments Compared with Recommendations</b>		
<b>Establishment</b>	<b>Caroline Walker Trust Guidelines (maximum)</b>	
	5-6 years	7-10 years
	<b>0.9</b>	<b>1.5</b>
Beefeater	2.3	
Beefeater	2.1	
Harvester	2.3	
Whacky Wharehouse	1.9	



## DISCUSSION

### *Overview/Main Findings*

This study has made an assessment and comparison of the nutritional adequacy of the provision of children's meals in a wide range of family establishments. Findings have revealed that, in general, the meals provided specifically for children are of poor nutritional quality. There was a tendency for meals to be energy and fat dense and NSP, carbohydrate and micronutrient poor, with the exception of sodium. A high percentage of meals were found to exceed not only CWT guidelines, but guidelines set by other organisations such as the World Health Organisation (WHO) (WHO, 1990; WHO, 2003), COMA (Department of Health, 2001), and the Department of Health 'Food and Health Action Plan' (Department of Health, 2004) in terms of percentage of fat and SFAs to total food energy. In some cases meals breached guidelines considerably. For example, some meals provided more than twice the recommendation for energy and four times more than the recommendation for fat and SFAs.

A number of meals were not only found to be low in certain micronutrients, but in fact absent entirely of a number of trace elements such as folate, vitamin C and A. When the sodium content of meals were compared to the recommendations set by COMA some meals were found to provide double, or close to double the daily recommendation for children aged 7-10 years. For children aged 4-10 years, a number of meals were nearly three times the RNI. Analysis does not take into account any discretionary use of salt that may be added during cooking, and at the table, so the potential amount of sodium consumed may be considerably higher.

It has been identified that increasing fruit and vegetable intake in children and adolescents is important (Block et al, 1992; Weisburger, 1999; Department of Health, 2003). Further, as identified by the Department of Health (2004), from National Diet and Nutrition Survey for Young People (Gregory *et al*, 2000) data, 1 in 5 children does not consume any fruit in a week, and in support of the 5-a-day campaign recommends the consumption of at least five portions of fruit and vegetables a day. However, a common trait in most of the menus is a worrying lack of fresh fruit and vegetables. Only two establishments of the fifteen sampled offered a selection of fresh vegetables. Several only provided the option of frozen peas. The establishments that offered the '*meal package*' did not provide fresh fruit as an option for dessert. This has a negative effect on certain micronutrients shown in the findings such as folate, vitamin C and vitamin A. In terms of NME sugars, meals were only analysed with a drink and/or dessert if it was included in the '*meal*

*package*'. This resulted in meals exceeding recommendations. It is important to consider the negative impact on meals if soft drinks and sweet desserts are included into the eating occasion.

### *Choice/Informed Choice*

Some menus lacked choice and variety several made false health claims by offering a '*healthy*' option, which was not entirely nutritionally preferable. Several also advertised and promoted meals and drinks that were nutritionally undesirable. Generally, a parent choosing from the children's menus would find it difficult to make a healthy choice. This study has identified that a number of establishments are not enabling consumers to receive balanced information in order to make a healthy choice. It appears that a number of restaurants have latched onto the public concern for health, and have worded menus in a way that promotes their meals as '*healthy*', although they are nutritionally inadequate. A good example of this is the menu for Whacky Warehouse, which refers to their chicken nuggets as a "*Healthy Option*". This meal did not meet the guidelines for energy (kcal), fat (g), fat as a percentage of total food energy, SFAs (g), SFAs as a percentage of total food energy, carbohydrate (g), carbohydrate as a percentage of total food energy, NSP (g), iron (mg), calcium (mg), vitamin A ( $\mu$ g) and C (mg), folate ( $\mu$ g) and sodium (g). It seems somewhat misleading, therefore, to promote this meal as "*healthy*".

In line with current concerns over food promotion and advertising, a number of the menus examined for the purposes of this study are designed in a way that is extremely appealing to children. Menus are brightly coloured, have pictures that may be appealing to children, and, in addition, the children's meals are worded in a fun and exciting way. For example, Fairlop Waters' two meals, both of which incidentally failed to meet a substantial number of the guidelines, are called "*Piranha Meal*" (fish fingers and fries with no vegetables) and "*Crocodile Logs*" (sausages and fries, again with no vegetables). In addition, menus such as the "*Herbies Children's Menu*" at Garfunkel's, and the "*Tuck in with the Gang*" menu at Whacky Warehouse, promote branded products such as Coca-Cola soft drinks and Heinz sauces. It can be argued that both of these are not well known for being the '*healthiest*' types of products.

### *Price/Accessibility*

A critical aspect of the findings of this study relates to the issue of accessibility. It is felt that the sample of establishments examined, covers a wide range of not only types of places where food is eaten outside of the home by children, but also covers different potential market groups. In this respect accessibility is not an issue. However, for families eating out at most of these

establishments there is limited access to *'healthy'* food. It is essential in the ongoing aim to improve and maintain the health of the paediatric population, with particular regard to the current obesity epidemic, that there is access to nutritionally adequate and beneficial foods for every type of eating occasion.

In general children's menus are competitively priced, usually in the region of £2-5/meal. Therefore, it is assumed that these meals are designed in order to be as cost-effective as possible and additionally with ease of preparation a priority. This is an important consideration when suggestions for improvement of the nutritional quality of the meals are proposed. In terms of the *'meal packages'*, these meals are promoted on the basis of cost-effectiveness. This is demonstrated on the Harvester Menu, which refers to *"free ice-cream"*. Price manipulation and incentives can have an effect on behaviour (Wanless, 2004) and it may be preferable to place these types of promotions onto more desirable foods such as on a free piece of fruit.

### *Cultural/Social Norms*

While foods eaten by children in these types of establishments may not necessarily contribute a main part of the diet, and may not have huge adverse effects on overall nutritional status, there are other potential negative factors that need to be considered. There are social and cultural issues relating to findings of this study. There were great similarities in the menus in terms of the dishes that were provided. The three most common meals were sausage and chips, chicken nuggets and chips and fish fingers and chips. All of these meals are processed and generally deep-fried in their entirety. Therefore, social and cultural norms are being set on what constitutes a reasonable and preferable meal for a child in the UK. These types of meals may influence food preferences and also establish what food is considered exciting and a real treat. The simple addition of vegetables to the plate may be the first step in changing these social norms by allowing children to identify that vegetables are a normal part of a meal, even part of an exciting meal out. It is also important that norms that are set for food eaten outside the home positively influence the types of foods eaten within the home.

### *Choosing a Better Diet for our Children*

The findings of this study support the findings of the qualitative study carried out examining children's menus by The Parents Jury, Food Commission last year (available at: [http://www.foodcomm.org.uk/press\\_pj\\_menus\\_03.htm](http://www.foodcomm.org.uk/press_pj_menus_03.htm)). The key conclusions were that choice and variety is limited, foods were generally processed and there was a lack of healthier options. The parents proposed that it might be beneficial to remove specific children's menus and instead offer

children reduced portions of normal meals. It is felt that there are other options that do not require the removal of child specific menus, which may assist in improving the nutritional quality of meals provided for children.

A study conducted to review nutrition labelling schemes, including the Heartbeat initiative developed by the Department of Health, found that for a scheme to be most effective they need to be adapted for the target audience and use simple messages (Holdsworth and Haslam, 1998). A study evaluating menu labelling in workplace restaurants concluded found there to be a large customer demand for nutrition labelling and, at that time, highlighted that further research was necessary in this area (Williams and Poulter, 1991) It may prove beneficial to take this existing initiative and reformulate and extend it to some degree to include a menu labelling system to identify healthy choices for children in restaurant settings (Oxford *et al*, 1997; Holdsworth *et al*, 1999).

It is important that within the current UK obese environment, children have access to nutritionally desirable foods for most potential eating occasion. This study has shown that for children eating out, access to '*healthy*' food is rarely provided. If the contribution of foods eaten from outside the home has increased by 13% in the year 2000 where approximately 675 million restaurant meals were eaten in the UK (Department of Health, 2002), and industry forecasts figures that indicate the market is expected to continue to grow (Euromonitor International, 2002), then these types of meals will become more significant to overall intake. Therefore, it is important, in that respect that meals need to improve. In addition, it is critical that the social and cultural norms that have been set by the food industry as to what constitutes a suitable meal for children changes, as it conflicts with current policies, guidelines, and the political environment. Eating out provides an important and valuable social occasion for families. Although further research is necessary, it is believed that the adult menus offered in these types of establishments offer a far wider choice. It may be beneficial in the future to introduce some kind of labelling system on children's menus, which could guarantee a true identification of the '*healthy*' options.

## REFERENCES

**All-Party Parliamentary Group on Obesity (2002).** Obesity and the Food Industry: Cause and Effect?

**Block. G., Patterson. B., Subar. A. (1992).** Fruit, Vegetables and Cancer Prevention: A Review of Epidemiological Evidence. *Nutrition and Cancer* **18**: 1-29.

**Consumer Association (2004).** Consumer Association Campaigns. Health Warning to the Government.

**Department for Environment, Food and Rural Affairs (2002).** Expenditure and Food Survey 2001-2002.

**Department of Health (2001).** Dietary Reference Values for Food Energy and Nutrients for the United Kingdom. Report of the Panel on Dietary Reference Values of the Committee on Medical Aspects of Food Policy. Report on Health and Social Subjects 41. London: HMSO, 1991.

**Department of Health (2002).** Annual Report of the Chief Medical Officer. Health Check on the State of the Public Health.

**Department of Health (2003).** Policy and Guidance. Health and Social Care Topics. 5-A-Day.

**Department of Health (2004).** Choosing Health? A Consultation on Action to Improve People's Health.

**Department of Health (2004).** Policy and Guidance. Health and Social Care Topics. National Fruit School Scheme.

**Euromonitor International (2003).** Food Service. Restaurants and Cafes in the UK.

**Food Standards Agency (2002).** Food Portion Sizes (3<sup>rd</sup> Edition). The Stationary Office

**Food Standards Agency (2002).** McCance and Widdowson's: The Composition of Foods (6<sup>th</sup> Summary Edition). The Royal Society of Chemistry and the Food Standards Agency.

**Food Standards Agency (2004).** Consultation Paper. Action Plan on Food Promotions and Children's Diets.

**Gregory. J., Lowe. S. Bates. C. J., Prentice. A., Jackson. L., Smithers. G., Wenlock. R., Farron. M. (2000).** National Diet and Nutrition Survey: Young People Aged 4 to 18 years. Volume 1: Report of the Diet and Nutrition Survey. The Stationary Office. London.

**Holdsworth. M., Haslam. C. (1998).** A Review of Point-Of-Choice Nutrition Labelling Schemes in the Workplace, Public Eating Places and Universities. *Journal of Human Nutrition and Dietetics* **11 (5)**: 423-445.

**Holdsworth. M., Haslam. C., Raymond. N. T. (1999).** An Assessment of Compliance with Nutrition Criteria and Food Purchasing Trends in Heartbeat Award Premises. *Journal of Human Nutrition and Dietetics* **12 (4)**: 327-335.

**Oxford. L, Stocker. S., Howard. P. (1997).** Audit for the Heartbeat Award in Staff Catering Facilities in an NHS Trust. *Journal of Human Nutrition and Dietetics* **10 (6)**: 361-371.

**Wanless. D. (2004).** Securing Good Health for the Whole Population. Final Report. HMSO.

**Weisburger. J. H. (1999).** Mechanisms of Action of Antioxidants as Exemplified in Vegetables, Tomatoes and Tea. *Food and Chemical Toxicology* **37**: 943-948.

**William. C., Poulter. J. (1991).** Formative Evaluation of a Workplace Menu Labelling Scheme. *Journal of Human Nutrition and Dietetics* **4 (4)**: 251-262.

**World Health Organisation (1990).** Diet, Nutrition and the Prevention of Chronic Diseases Geneva, Technical Report Series, No. 797.

**World Health Organisation (2003).** Diet, Nutrition and the Prevention of Chronic Diseases – Report of a Joint WHO/FAO Expert Consultation. WHO Technical Report Series 916. Geneva.

**APPENDIX 1: Caroline Walker Trust Guidelines for School Meals**

<b>Table 1: Caroline Walker Trust Nutritional Guidelines for School Meals</b>			
<b>Nutrient</b>		<b>5-6 Years</b>	<b>7-10 Years</b>
Energy (kcal)	30% of EAR	489	557
Total Fat (g)	Maximum 35% of Food Energy	19.0	21.7
SFAs (g)	Maximum 11% of Food Energy	6.0	6.8
Carbohydrates (g)	Minimum 50% of Food Energy	65.2	74.3
NME Sugars (g)	Maximum 11% of Food Energy	14.3	16.3
NSP (g)	Minimum 30% of Calculated Reference Value*	3.9	4.5
Protein (g)	Minimum 30% RNI	5.9	8.5
Iron (mg)	Minimum 40% RNI	2.4	3.5
Calcium (mg)	Minimum 35% RNI	158	193
Vitamin A (µg)	Minimum 30% RNI	150	150
Folate (µg)	Minimum 40% RNI	40	60
Vitamin C (mg)	Minimum 35% RNI	11	11
Zinc (mg)	Minimum 40% RNI	2.6	2.8
Sodium (g)	Maximum 30% Daily Maximum SACN	0.9	1.5