



School Lunch box Survey 2004

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on behalf of the Community Nutrition Group and the
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Executive Summary

This report contains the results of the second survey of school lunchboxes carried out by the Community Nutrition Group of the British Dietetic Association on behalf of the Food Standards Agency. The first survey was carried out in 25 schools across the UK and completed in June 2003. The second survey reported here was carried out in 28 schools across the 5 regions of England (North West, North East, Midlands, South East and South West). A total of 688 lunchboxes were surveyed. The sample of schools was selected to represent a cross section of rural and urban schools, and socioeconomic areas within each region. A minimum of 100 pupils from 4 schools were surveyed in each region. The survey was carried out by two State Registered Dietitians, Angie Jefferson and Kathy Cowbrough. Surveying primarily took place during the weeks commencing May 24th and June 7th 2004.

Summary of Key Findings:

Pupil statistics:

- In total 688 pupils were surveyed from 28 schools.
- On average around 45% of school pupils take a packed lunch from home (NFS young people aged 14-18 years, 2000)
 - 95% of the pupils in the survey had a packed lunch on 4 or 5 days of the week and so can be classed as usually eating a packed lunch.
- 340 (49.4%) were male and 346 (50.3%) female
- 29 (4%) were aged 9 years, 252 (36%) were aged 10 years, 406 (59%) were aged 11 years and 1 aged 12 years (0.1%).

Nutritional Standards

- When compared to food group standards set for primary school meals – that a meal provide at least one fruit and one vegetables, one milk or dairy item, one meat, fish or alternative protein source and one portion of a starchy food – 180 (26%) lunchboxes met the food groups standard, which is a small improvement on the 2003 figure of 118 (21%) of lunchboxes.
- If the requirement for provision of a dairy food were excluded then in total 282 (41%) of lunchboxes met the standard, which again is an improvement on the 2003 figures of 198 (35%) lunchboxes meeting the three food group standard.

Nutrition Analysis

- The nutritional profile of the lunchboxes was obtained using CompEat Pro dietary analysis software for macronutrient content (energy, protein, fat, saturates, total carbohydrate, starch, total sugars and sodium).
- The results of the nutritional analysis were compared with the Dietary Reference Values (DRV) for the UK population. These values provide reference intakes for a day – it can therefore be assumed that lunch, as one of three meals should provide around one third of each of the nutrient requirements.
 - Average energy content of lunchboxes was 682kcal, equivalent to 35% of Estimated Average Requirement (EAR).
 - Average protein content was 18g, equivalent to 11% of Recommended Nutrient Intake (RNI).

- Fat content was slightly high at 29g, equivalent to 38% of average lunchbox energy.
- Saturates were high at 12g, equivalent to 16% of average lunchbox energy.
- Carbohydrate content was 91g, equivalent to 50% of average lunchbox energy.
- Average sodium content was high at 935mg, equivalent to 64% of RNI – or 2.3g of salt which is 46% of the target average salt intake recommended by SACN for 10 year olds and 38% of target salt intake for 11 year olds.

Regional & Income Comparisons

- Analysis was undertaken in order to allow comparison of differences in the lunchboxes between the five regions of the UK.
- In terms of food group standards the percentage of lunchboxes meeting the four food groups standard set for primary school lunches varied from 20% lunchboxes in the South East and South West to 36% lunchboxes in the North West.
- When the three food group standard was applied (excluding dairy) the percentage of lunchboxes meeting both standards varied from 32% in the South West to 54% in the North West.
- The number of lunchboxes meeting the food group standards reflects variations in the number of pupils taking fruit and vegetables as part of their lunch. It is interesting to note that the regions with the highest numbers of pupils taking fruit and/or vegetables to school in a packed lunch (North West and Midlands) are those where the School Fruit and Vegetable Scheme (which provides free fruit and vegetables to children aged 4-6 years) has been running longest.
- Regional comparison of the nutrient content of the lunchboxes shows very little variation:
 - Energy content varies between 651-705 kcals – a variation in % RNI of 5%
 - Protein content varied between 17-20g – or 10-12% energy
 - Fat content varied from 27-30g – or 36-39% energy
 - Saturated fat content varied from 11-13g – or 15-17% energy
 - Carbohydrate content varied from 87-93g – or 49-52% energy
 - Sugar content varied from 39-45g or 21-26% energy
 - Sodium content showed the greatest variation of 897-959mg – or a variation in % RNI of between 61-69%
- It is not possible from the data collected to pin-point foods responsible for specific differences.
- Any regional differences in nutrient content or standards are unlikely to be explained by differences in affluence as the percentage of pupils receiving free school meals in each region is similar, varying only between 19% in the Midlands to 24% in the North East.
- Similar to 2003, there was little difference in the nutritional content of lunchboxes between areas of higher deprivation (those with >18% pupils receiving free school meals) and those with a lower deprivation rate (free school meals 18% or below).

Food Choices

- The most popular items in a lunchbox were a white bread sandwich (69% lunchboxes) – filled with ham (27%), cheese (17%) or chicken (11%), accompanied by a packet of crisps (69% lunchboxes) and by at least one of the following: chocolate bar or biscuits (58%), cake (29%), yoghurt or a cheese snack (59%).

- A serving of fruit or vegetables (either a serving of fruit, salad/veg or fruit juice) was contained in just 52% of lunchboxes.
- 95% of children either brought a drink in their lunchboxes or were able to obtain water at school.

Overall the packed lunches, as expected from last years results, continue to be high in saturated fats, sugars and in particular sodium. Of concern is the low inclusion of fruit and vegetables into lunch boxes and high frequency of sugary and fatty foods in the form of sweetened soft drinks, cakes, biscuits, chocolate bars and crisps.

Recommendations for action remain unchanged: Educational activities for both parents and children needs to focus on improving awareness of the need for inclusion, and consumption of, fruit and vegetables. Improvement is also required in the balance of starches to sugars and positive messages to increase intake of starchy foods may be more effective than more negatively focused messages to reduce sugar intake.

Lunchboxes continue to be dominated by the presence of several snack/convenience items at the expense of more desirable items such as fruit or snack items that are low in sugar and/or salt.

Background

For several years poor eating habits among the nation's children have been highlighted as a cause for concern in numerous medical and media reports. This has received a much higher level of public attention in recent months due to publication of the results of the Parliamentary Select Committee on Obesity and also the FSA report into the Promotion of Foods to Children. Both of these committees have devoted much consideration to the problems of poor eating habits among children and the rapidly rising rates of obesity and overweight among pre- and school aged children.

One in three British children is now overweight and the number of obese children has doubled in the past 20 years. However the cause of these increases in overweight are not clear and the results of nutritional surveys appear to indicate a dichotomous scenario of children consuming fewer calories than their counterparts in previous decades, but having increased body weights and dramatically increased body fat levels.

The most plausible underlying explanation is a fall in energy expenditure due to the explosion in sedentary computer games, hours spent watching television and parental safety concerns resulting in curtailed activity outside of school hours. Added to this is a fall in time devoted to activity within the national curriculum and a four-fold increase in the numbers of children driven to school. Less than half of all children now walk to school. In 1970 half of all children were allowed to travel to school unaccompanied, but by 2000 this had dropped to just one in seven. (Obesity (1999) British Nutrition Foundation) This is resulting in an energy imbalance, where energy intake exceeds energy expenditure, resulting in a slow, insidious weight gain.

Recommendations for action arising from these (and other) health committees are very much child focused and call upon parents, schools, the food industry and government to act together to stem the rising tide of overweight and obesity among children. . For example the Promotion of Foods to Children report includes the following recommendations:

- Schools (and other publicly funded premises such as leisure centres) should ensure that vending machines are managed on the basis of a health vending approach which includes the promotion of healthier options.
- Schools should provide and promote a range of healthy options at mealtimes and develop incentives to promote uptake of them in accordance with the Agency's guidelines. Local Education Authorities and Education Departments should support schools' efforts to make these changes.

Nutritional Guidelines for Schools were introduced in 2001 with the aim of improving children's diets. Primary schools must offer at least one fruit and one vegetable, one milk or dairy item, one portion of meat, fish or other protein source and one starchy food, such as bread, pasta or rice. Similar guidelines apply to secondary schools, although the number of portions offered tends to be larger as more choice is offered. However less than half of all children consume a lunch provided by school and the remainder are consuming lunches provided from home or purchased outside of the school premises. An estimate by Mintel (2002) is that 5.5 billion lunches are packed for children each year in the UK.

A common assumption among parents is that providing a packed lunch is a healthier choice compared to consuming a school meal. However the results of the first School Lunchbox Survey carried out in 2003 challenged this assumption.

The purpose of this survey therefore was to clarify and expand on the findings of the 2003 survey, and to provide further information on the actions required to help to improve the foods taken by children to school in their lunchboxes.

Scientific Objectives

- To carry out a cross sectional survey in primary schools across the 5 regions of England to determine the food and nutritional content of packed lunches taken into school.
- The schools will represent a range of localities and socio-economic groups.
- The food analysis will present food groups, comparison to school meal standards and information on major brands.
- The dietary analysis will present macronutrients (energy, fat, saturated fat, carbohydrate, total sugars, and protein) and salt content.
- In addition, regional comparisons will be undertaken in terms of food and nutritional content of the lunch boxes.

In addition qualitative data will be collected from 3 key questions (to be developed by the FSA) presented to at least 50% of all pupils in each region.

Survey to be carried out in a minimum of 25 schools, to include 5 schools in each of the 5 regions of England, with approximately 25 pupils per school aged 10-11 years. A broad sample of schools from different geographical and socioeconomic areas and sampling will take place across the school week. This will provide information on a total of approximately 600 lunchboxes.

This research will provide data on the content of school lunch boxes for the Agency's Nutrition and Communications Department. This will enable the Agency to provide evidence-based messages and advice, on this issue, via the Agency's web-site. This research will also provide information to be used by the FSA in communications with external organisations and the media.

Methods

The Community Nutrition Group (CNG) of the British Dietetic Association has around 250 members, many of whom are already working with schools in their local areas. The membership are already aware of the school lunchbox survey as a result of the 2003 activity, either taking part in last years survey or participating in the dissemination of the result to schools and the media. Utilising the membership of CNG to conduct the survey once again offered the advantage of providing experienced local dietitians able to undertake the survey across the UK. Members of CNG were invited by letter to take part in the survey and asked to propose local schools in which the survey could be conducted. They were asked to provide

basic data on the school demographics in order that a representative sample of schools could be chosen. (Recruitment letter and expression of interest form provided in Appendix 1) In return for their involvement they were offered an honorarium of £175. The schools were each offered an honorarium of £50.

A total of 21 dietitians expressed interest in participating in the survey and volunteered more than 30 schools to be involved. Many were able to offer flexibility regarding school type in order to fulfil the demographics required by the project. This year however only a single school volunteered from the North West region of England and so additional recruitment took place in the form of e mails and telephone calls to dietetic departments across the region in order to illicit support.

A representative sample of 28 schools was chosen from the schools offered in order to match the criteria outlined below. The list of sample schools can be found in Appendix 2.

- **Geographical distribution:** In order to cover a wide spread in terms of geographical distribution, schools were recruited from the 5 regions of England: North East; North West; South East, South West, and the Midlands. The final sample contained a minimum of 4 schools from each region, with a slightly higher representation of the Midlands and South East Regions as these have a higher population density and as a reflection of this a greater number of schools in these areas were included.
- **Location** – urban or rural. The final sample included 3 inner city schools (11%), 8 rural schools (28%) and 17 urban schools (61%).
- **Free school meals:** The number of pupils eligible for free school meals in the school were used as a simple measure of income and economic status of the area. The current national average is that 18% of pupils from primary schools in England are eligible for free school meals. The average for this sample was 21% of pupils eligible for free school meals. This is slightly higher than the national average, but is likely to reflect the fact that dietitians are targeting their work to schools with a higher level of need. Actual % eligibility varied from 50% eligible for free schools meals down to 0%.
- **Ethnic Mix.** The dietitians were asked to provide information on ethnic mix within the school in order to reflect the diversity of the UK population. A higher proportion of ethnic minorities were recorded in the schools in the South East and Midlands regions.
- **Survey days:** The survey was carried out evenly across the week.

The contents of the lunch box were recorded on a standard form developed for this survey. (See Appendix 3) The dietitians were provided with detailed instructions for completion of the form, with the option to telephone for clarification of issues where required. (See Appendix 4)

Information on representation of the Five Food Groups outlined in the Balance of Good Health (See Appendix 5) was collated manually by a single dietitian. Information on the inclusion of branded items (such as savory snacks, drinks and confectionary items) was also collated

manually. The data were analysed for macronutrient content (energy, fat, saturated fat, carbohydrate, starch, total sugars, protein and salt).

In addition a qualitative questionnaire was provided to every pupil taking part in the survey for self completion (See Appendix 6). The purpose of the survey was to explore children's favourite and least favourite lunchbox foods and also to find out what they would want in their dream lunchbox, and what, if given the choice, they would banish from their lunchbox forever.

Results

The survey was completed in 28 schools. Due to the timing of the survey, the schools were on half term break and also some had school residential trips around the time that surveying take place. For these reasons surveying was primarily undertaken during two separate weeks – commencing either on the 24th May or the 7th June 2004.

Profile of pupils:

- 688 pupils were surveyed in total
 - 340 (49.4%) were male
 - 346 (50.3%) were female

 - 3 (0.4%) were aged 8 years
 - 26 (4.1%) were aged 9 years
 - 252 (36%) were aged 10 years
 - 406 (59%) were aged 11 years
 - 1 (0.1%) was aged 12 years

Sampling Days:

Surveying took place during the weeks of May 24th and June 7th 2004, and schools were visited on all days of those weeks. The day selected for surveying depended both on the availability of the dietitian and suitability for the school. Several last minute changes to survey days took place due to problems arising with pupils being away on days trips from the school.

- 8 schools were surveyed on a Monday (29%)
- 3 schools were surveyed on a Tuesday (10%)
- 5 schools were surveyed on a Wednesday (18%)
- 8 schools were surveyed on a Thursday (29%)
- 4 schools were surveyed on a Friday (14%)

Number of days having Schools Meals during the week.

The number of days of the week when packed lunch was taken to school was only reported for 462 pupils (67% of the sample).

Of these:

- 415 (90%) had a packed lunch on 5 days of the week
- 22 (5%) had a packed lunch on 4 days of the week
- 19 (4%) had a packed lunch on 3 days of the week

- 6 (1%) had a packed lunch on two or less days of the week

General Notes:

- The scope of the analysis has been limited to items consumed or intended for consumption at lunchtime. Where items were listed as eaten/for eating during break time these were excluded.
- Water was recorded as consumed if specifically listed as an amount as part of the lunch. Where a record was made of water being available in school – with the intention of the child to consume this with lunch, a drink with lunch was recorded, but not included as part of the computerized nutrition analysis.

Food Groups Analysis

The Department for Education and Skills introduced minimum standards for Schools meals in April 2001. The Primary schools standard for the provision of school meals is that each school must offer at least:

- One portion of fruit and one vegetable
- One portion of milk or dairy item
- One portion of meat, fish or other protein source
- One portion of a starchy food, such as bread, pasta or rice.

Provision of these items was therefore taken as the ideal standard for a lunch box from home – that it would contain one item from each of these food groups.

The food group information was collated by a single dietitian and foods were judged according to the foods groups represented by the Balance of Good Health (Appendix 5). Where foods represented more than one food group, for example cheese could be classified as both a protein source and a dairy food, this food was assigned to all possible categories. Where composite foods were found e.g. pizza these again were assigned to appropriate food groups, in this case bread and cereals group, meat, fish and protein group, and milk and dairy group.

With regard to fruit and vegetables, foods were assigned to this category if judged to be sufficient to count as 1 portion of fruit **or** 1 portion of vegetables. Advice for children is that smaller portions may be appropriate (Food Standards Agency, 2003). An example of the subjective criteria applied by the dietitian is that where 3-4 slices of cucumber were found in a sandwich this was deemed insufficient to represent a portion, whereas the presence of 8-10 grapes or 1 satsuma was judged to be an adequate portion for a child of this age.

Foods were judged to be fatty or sugary foods according to examples provided in the Balance of Good Health. In this case, although nutritionally these items also provide carbohydrates (either as starch or sugar) items such as crisps, biscuits, cakes, confectionery etc were assigned simply to the fatty and sugary foods category. Thus if a lunch box contained a packet of crisps but no bread then it was judged to contain a fatty and sugary food, but no starchy food. Sweetened drinks were not recorded as part of the fatty and sugary foods group.

Drinks were also recorded as part of the food group analysis. Where a drink was recorded or indication was made that the child drank water provided by the school this was also recorded as a drink (but excluded from the nutrition analysis).

The first standard applied was the achievement of the standards for four food groups in a lunchbox as detailed above. A total of 180 (26%) pupils met the standard for four food groups in their lunchbox. (see Appendix 7)

A second standard was also applied. We judged that it would also be nutritionally acceptable for a lunchbox to contain 3 food groups:

- One portion of fruit and one vegetable
- One portion of meat, fish or other protein source
- One portion of a starchy food, such as bread, pasta or rice

With exception of cheese, it is more difficult to provide dairy foods such as yoghurts in a lunch box which may not be chilled. While it would be ideal for a lunch box to contain a dairy food, as calcium is a mineral known to be vulnerable in a child's diet, lunch is only one of numerous eating occasions during the day and it would be possible to meet this requirement at these other eating occasions. The detailed results of this are shown in Table 1 and Appendix 10

A common concern among schools pupils is access to an adequate amount of fluid during the day. In this survey 621 (90%) of pupils either brought a drink in their lunchbox or reported obtaining water from school. The remaining pupils apparently did not have a drink at lunch. It is beyond the scope of this survey to assess total intake of fluid during the school day.

Table 1: Number of pupils meeting Food Group Standards

	No Pupils	4 food groups	% Pupils	3 food groups - no Dairy	% pupils	Total no meeting 2 standards	% Meeting both standards
SchLBS01/04	14	1	7	3	21	4	29
SchLBS02/04	25	4	16	10	40	14	56
SchLBS03/04	26	3	12	1	4	4	15
SchLBS04/04	21	8	38	1	5	9	43
SchLBS05/04	24	6	25	6	25	12	50
SchLBS06/04	27	8	30	7	26	15	56
SchLBS07/04	33	10	30	4	12	14	42
SchLBS08/04	22	1	5	2	9	3	14
SchLBS09/04	26	3	12	2	8	5	19
SchLBS10/04	23	7	30	3	13	10	43
SchLBS11/04	27	5	19	5	19	10	37
SchLBS12/04	26	5	19	2	8	7	27
SchLBS13/04	23	6	26	3	13	9	39
SchLBS14/04	23	8	35	2	9	10	43
SchLBS15/04	25	8	32	3	12	11	44
SchLBS16/04	25	3	12	1	4	4	16
SchLBS17/04	25	9	36	4	16	13	52
SchLBS18/04	21	12	57	1	5	13	62
SchLBS19/04	25	8	32	5	20	13	52
SchLBS20/04	13	4	31	0	0	4	31
SchLBS21/04	26	7	27	2	8	9	35
SchLBS22/04	26	7	27	5	19	12	46
SchLBS23/04	30	6	20	8	27	14	47
SchLBS24/04	27	3	11	3	11	6	22
SchLBS25/04	26	10	38	6	23	16	62
SchLBS26/04	27	6	22	1	4	7	26
SchLBS27/04	24	13	54	8	33	21	88
SchLBS28/04	31	9	29	4	13	13	42
Total	691	180	732	102	405	282	1137
% of Pupils			26%		14%		41%

* 4 food groups = fruit & vegetables, bread & cereals, meat, fish & other proteins and milk and dairy, # 3 food groups = fruit & vegetables, bread & cereals and meat, fish & proteins

Nutrition Analysis

The data were analysed for macronutrient content (energy, fat, saturated fat, carbohydrate, starch, total sugars, protein and salt) using CompEat Pro, a Nutritional Analysis computer software package which includes the McCance and Widdowson 6th Edition database and uses Food Portion Sizes, MAFF second edition 1993. A database of 136 foods was developed for use in this school lunch analysis in order to incorporate some of the specific snack type products often included in school lunches. It should be noted that not all foods on either the McCance and Widdowson database or the client added database included data for sugars and sodium. Examples of foods entered onto the database include Dairy Lea Lunchables, Robinsons Fruit Shoot, Cheese Strings and Frubes.

Of note this year was the considerable increase in the range of branded goods appearing in lunchboxes. For example, in 2003 the main producer of cheese strings was Golden Vale. In 2004, not only were several major brands producing cheese strings (Golden Vale, Dairy Lea etc), but also each supermarket produce their own version as well – each with a different nutrient profile and all appearing in lunchboxes. This gave some considerable challenge to the nutrition analysis. Where nutrition data was not available, or an incomplete range of nutrients were given on a label then the nearest equivalent product from the database was used for the analysis.

Where a portion size was specified by the dietitian on the data collection sheet this was used in the analysis. If no portion size is listed, then a standard portion size was used from MAFF Food Portion Sizes 'Second Edition' 1993 (HMSO).

Where the drink was recorded by volume (in millilitres) a specific gravity (taken from MAFF Food Portion Sizes 'Second Edition' 1993 (HMSO)) was used to get the equivalent weight in grams. If no volume were specified then 250ml was used.

Spreads used on bread proved difficult for the dietitians to record. Several noted that when questioned, most children reported their sandwich to be made with butter – the concern being that butter is often used as a generic term for spreads of any variety. Where butter was stated by the child this, rather than margarine or spread, has been included into the analysis. Portion size was also difficult to specify. As a medium portion of butter on bread is 10g, and margarine 7g these figures were used for the analysis. It is possible that the lack of specificity as far as spreads are concerned may have affected the fat and saturated fat content of the analysis.

In CompEat Pro, the analysis of sugars and starches do not fit ideally with the groupings defined in dietary reference values. Analysis figures are provided here for total carbohydrate, total starches and total sugars. It is not possible at the present time with CompEat to separate out sugars into non-milk extrinsic, intrinsic and milk sugars and starch as occurs in the DRV groupings.

The age group of the children surveyed crosses two different age groups for Recommended Nutrient Intakes (7-10 years and 11-14 years). A weighted RNI has therefore been calculated for each nutrient (See Appendix 8). The weighted data was not used to calculate the nutrition analysis results below.

It could be assumed that as one of the three major meals of the day that a lunch box should provide approximately one third of requirement for both energy and macronutrients.

Nutrition Analysis Results:

See Appendix 9a and 9b.

- Average energy content of a lunchbox was 682kcal (min average 565kcal, max average 809kcal), which represents 35% of the Estimated Average Requirement for energy.
- Average Protein content was 18g (min average 14g, max average 24g), equivalent to 52% of the RNI and 11% energy from protein.
- Average fat content was 29g (min average 23g, max average 37g), equivalent to 38% of RNI and 38% energy.
- Average content of saturated fats was 12g (min average 7g, max average 17g), equivalent to 50% of RNI and equivalent to 16% of average lunchbox energy.
- Average carbohydrate provision was 91g (min average 75g, max average 112g), equivalent to 35% of RNI and 50% of average lunchbox energy.
- Average starch content was 42g (min average 34g, max average 56g), equivalent to 23% of average lunchbox energy.
- Average content of total sugars 41g (min average 28g, max average 53g) per lunchbox, equivalent to 22% average lunchbox energy.
- Average sodium content was high at 935mg, (min 695mg, max 1158) equivalent to 64% of the RNI in a single meal (range 40%-84%). This is equivalent to 2.3g of salt which is 46% of the target average salt intake recommended by SACN for 7-10 year olds and 38% of the salt intake of the target average salt intake for 11-14 year olds.
- If compared to recommended proportions of energy derived from macronutrients
 - Protein content of the lunchboxes equated to 11% of energy intake, compared to the recommended percent energy of 15%.
 - Total fat equated to 38% of actual energy which compares well with the recommendation of a maximum of 35% energy from fat.
 - Saturated fat was high, providing 16% of energy intake, compared to the recommended maximum intake of 11% energy.
 - Energy from carbohydrate was equivalent to 50% of total energy, which compares well with the recommendation of a minimum of 50% energy from carbohydrate.
 - However according to recommended dietary intakes the 50% of dietary energy from carbohydrate should be split - 11% provided by non milk extrinsic sugars and the remaining 39% from starches, intrinsic and milk sugars. In the analysis performed it is not possible to separate intrinsic, milk and extrinsic sugars and so results cannot be discussed with confidence. However given that 93% of lunch boxes contained fatty and sugary foods, with a high frequency of confectionery, cakes and biscuits and just 51% of lunches contained fruit, fruit juice or vegetables, it seems reasonable to assume that intake of non milk extrinsic sugars is higher than ideal and intake of starches and intrinsic sugars is lower than ideal.

Comparison with Caroline Walker Trust Guidelines

The Caroline Walker Trust Expert Working Group on Nutritional Guidelines for School Meals has proposed nutritional guidelines for an average school meal. A comparison of the average nutritional content of the lunchboxes surveyed here compared to these guidelines is given in Table 2 below.

Table 2 Comparison of average lunchbox nutrition content with the Caroline Walker Trust Nutritional Guidelines for School Meals

	CWT guidelines	CWT guidelines 7-10 year olds: all pupils	Average Lunch Box 2003	Average Lunch Box 2003	Average Lunch Box 2004	Average Lunch Box 2004
Energy	= 30% of the estimate average requirement	557kcal	36% EAR	646kcal	35% EAR	682kcal
Fat	<35% of food energy	21.7g	36% food energy	26g	38% RNI & 38% food energy	29g
Saturated fatty acids	<11% of food energy	6.8g	15% food energy	11g	50% RNI & 16% food energy	12g
Carbohydrate	=/>50% of food energy	74.3g	53% food energy	91g	35% RNI & 50% food energy	91g
Non-milk extrinsic sugars	<11% of food energy	16.3g	24% food energy*	40g*	22% food energy*	41g*
Protein	>30% of the RNI	8.5g	48% RNI	17g	52% RNI or 11% energy	18g
Sodium	Should be reduced in catering practice	Should be reduced in catering practice		929mg	64% RNI	935mg

* **Figures provided here are for total sugars, including both non-milk extrinsic, intrinsic and milk extrinsic sugars**

Compared to the Caroline Walker Trust Guidelines the average lunchbox continues to be slightly high in energy and total fat, contains an excess amount of saturated fats and protein, and an apparently high quantity of sugars. Interpretation of the sugars data however is limited due to the CompEat analysis providing only figures for total sugars and not the equivalent fractions referred to in the guidelines. It can however be assumed from the food items provided in the lunchboxes that the larger proportion of the sugars content will be derived from non-milk extrinsic sugars and a minor proportion from intrinsic fruit sugars or milk extrinsic sugars.

Food Items

Total Number of lunch boxes surveyed = 688

Percentage figures refer to percentage of total lunchboxes

Sandwiches

See Appendix 10

- A total of 580 (84%) lunch boxes contained a bread based choice (sliced bread, rolls, pitta bread, wraps etc.)
- The most popular choices were a white sandwich or roll, included in 472 (69%) lunch boxes
- The most popular sandwich/bread fillings were ham - 187 (27% sandwiches), cheese – 146 (21% sandwiches), or chicken – 76 (11% sandwiches)
- Other popular fillings included: turkey – 37 (5%), tuna – 56 (8%), jam/honey – 33 (5%) and marmite – 18 (3%),

Fruit Items

See Appendix 11

- 360 (52%) lunchboxes contained a portion of fruit
- 23 (3%) of these were dried or canned fruit, the remainder being fresh fruit
- The most popular choices were:
 - Apples – 126 (18%)
 - Banana – 59 (9%)
 - Orange/Satsuma – 50 (7%)
 - Grapes – 46 (7%)
 - Pear – 25 (4%)

Crisps & Savory Snacks

See Appendix 12

- 473 lunchboxes (69%) contained a bag of crisps or bag of savory snacks.
- The most popular Brands were:
 - Walkers – 274 (40%)
 - Retailer own brand e.g. Tesco, Asda, Sainsbury etc – 74 (11%)
 - KP – 55 (8%)

Biscuits and Chocolate Bars

See Appendix 13

- 402 biscuits and chocolate bars were recorded. Some lunch boxes contained more than one item and so it cannot be assumed that this represents an equal number of lunchboxes.
- 167 fully or part coated chocolate biscuits were recorded
- 162 items of chocolate confectionery were recorded
- If biscuit items that are not chocolate coated are separated out these represented just 67 items, or 10% of this group.
- The most popular brands were:

- Nestle – 78 (19% of choices)
- Masterfoods/Mars – 55 (14% of choices)
- Cadburys – 48 (12% of choices)
- Retailer own brand – 43 (11% of choices)

Sugar Confectionery

See Appendix 14

- Only 19 (2.9%) lunchboxes contained sugar confectionery items, which is a decrease compared to 2003
- The most popular choice was Kellogg's Fruit Winders 13 (2%)

Yoghurts and Dairy Items

See Appendix 15

- 335 (49%) lunchboxes contained a dairy item
 - 114 (17%) contained a yoghurt or fromage frais
 - 61 (9%) contained a tube/frube of yoghurt
 - 96 (14%) contained a branded cheese snack item
- The favourite cheese snack items included:
 - Cheese Strings – 52 (54% of choices)
 - Baby Bel – 17 (18% of choices)
 - Dairylea Dunkers/lunchables – 18 (19% of choices)

Cakes and Cereal Bars

See Appendix 16

NB some lunchboxes contained more than one cake item or cereal bar

- 144 (21%) cake items were recorded
 - the favourite brand was Cadburys Mini Rolls or cake bars 28 (19% choices)
 - Jaffa Cakes – 18 (3% of cake choices)
- 55 (8%) contained a branded cereal bar
 - Kellogg's was the most popular choice – 22 (40% of cereal bars) with a combination of cereal and milk bars and Nutrigrain.

Drinks

See Appendix 17

- 654 (95%) lunchboxes contained a drink in a refillable container, pre-packaged drink or obtained water from a school supply.
 - 257 (37%) were fruit squashes
 - 115 (17%) were tap or bottled waters
 - 99 (14%) were fruit juices
 - 70 (10%) were fruit juice drinks
 - 43 (6%) were low calorie squashes
 - 14 (2%) were milk or milkshakes

- 34 (5%) pupils appeared to not have a drink to consume at lunchtime

- Popular brands included
 - Capri Sun – 52 (16%)
 - Robinsons – 59 (9%)
 - Ribena – 34 (5%)

Comparison of Schools with Low/High Free School Meals

See Appendix 18

Information on the socioeconomic status of individual children was not collected as part of this survey; however the rates of free school meal eligibility was used as a guide to the general socioeconomic status of the area within which the school is located. The national average for free school meals is 18%. It has therefore been assumed that schools with a free school meal eligibility of less than 18% are not socio-economically deprived and that those with a free school meal eligibility of 18% or above are deprived.

There appears to be no real difference in the nutritional content of lunchboxes brought into the survey schools. This may be due to no influence of household income on the content of school lunchboxes or may be influenced by the fact that children from particularly low income homes will be eligible for a free school lunch and so will not be bringing a packed lunch. It is possible that the simple fact that surveying lunchboxes has self-selected children from households who are not on low incomes. However, it could also be argued that provision of a packed lunch potentially may be a cheaper option than purchasing a cooked school lunch.

The results of this survey suggest that there is no difference in the nutritional content of lunchboxes between areas of varying affluence.

Regional Comparison of Nutrient Content & Standards

New to the survey in 2004 was a comparison of the variation between lunchboxes consumed in different regions of England. Appendix 19

The nutrition analysis of the schools from the five regions of England were compared in order to assess if any regional difference are occurring in terms of foods being brought into schools.

The analysis found few regional differences between the nutrient content of the lunchboxes (see Table 3).

Table 3: Comparison of the nutrient content of lunchboxes between the five regions of England

	South East	South West	Midlands	North East	North West
No schools	8	4	6	6	4
No pupils	192	102	139	147	109
Energy kcal	651	683	691	705	695
% RNI	32	35	36	37	37
Protein g	17	18	19	20	19
% energy from protein	10	11	11	12	11
Fat g	28	30	30	29	28
% energy from fat	38	39	39	37	36
Sat fat g	11	12	13	12	12
% energy from Sat fat	15	16	17	15	15
CHO g	87	90	91	93	96
% energy CHO	51	49	50	49	52
Sugars g	39	39	42	41	47
% energy sugars	22	21	23	22	25
Sodium mg	906	959	891	985	962
% RNI	61	69	62	68	62

In addition further analysis was been undertaken to assess whether the number of lunchboxes meeting the food group standards shows any variation between region.

In terms of food group standards the percentage of lunchboxes meeting the four food group standard set for primary school lunches varied:

- 20% lunchboxes in the South East and South West
- 25% lunchboxes in the North East
- 33% lunchboxes in the Midlands and,

- 36% lunchboxes in the North West.

When the three food group standard was applied (excluding dairy) the percentage of lunchboxes meeting both standards also varied, although this mainly reflected the variation in the three group standard:

- 32% in the South West
- 38% in the South East
- 39% in the North East
- 43% in the Midlands and,
- 54% in the North West.

The number of lunchboxes meeting the food group standards reflects variations in the number of pupils taking fruit and vegetables as part of their lunch. It is interesting to note that the regions with the highest numbers of pupils taking fruit and/or vegetables to school in a packed lunch (North West and Midlands) are those where the School Fruit and Vegetable Scheme (which provides free fruit and vegetables to children aged 4-6 years) has been running longest.

Research surrounding the regional pilot schemes has found that providing free fruit and vegetables tends to result in a greater consumption of fruit and vegetables at home by the children and their families, and an increased awareness of the importance of fruit and vegetables in the diet.

Although none of the age group of children involved in this survey are likely to have received free fruit and vegetables, as they will have been too old when the pilot were introduced, the increase in awareness of the need to eat more fruit and vegetables following the introduction of the scheme may have had an impact on consumption through out the schools and regions involved. It will be interesting to monitor whether the numbers of pupils including fruit and vegetables into their lunchboxes increases in the remaining regions where the scheme is now being introduced.

Top 10 foods contributing to major nutrients

After some initial results from the survey, the Food Standards agency asked for a calculation of the 10 top foods contributing to energy, fat, sugar and sodium. Due to the volume of material, a sample of 11 schools was selected according to the criteria in Appendix 20. The nutritional analysis programme Comp Eat was used to select the foods contributing to each of these nutrients for the 11 schools. When available, data on specific foods for example, Kit Kat or Bounty or Walkers prawn cocktail crisps, had been entered for the analysis. For calculating the top 10 foods these specific foods were grouped to give a better idea of the types of foods contributing to major nutrients in this lunchbox survey.

Foods that appeared in:

- 3 of the categories were potato crisps, cheese, butter confectionery, white bread, Chocolate (other types), chocolate biscuits

- 2 of the categories were Sausage rolls, margarine, fruit drinks/squashes.

Qualitative Survey Results

All pupils who had their lunchbox contents surveyed were also asked to fill out a qualitative questionnaire in order to ascertain their thoughts and views on the foods contained in their lunchboxes. (See Appendix 6 for a copy of the questionnaire and detailed results in Appendix 21).

Pupils were questioned regarding their favourite and least favourite lunchbox items, if they could have whatever they wanted in their lunchbox what would it be and what they would like to see banished from their lunchbox. In addition they were asked what they do with foods in their lunchbox that they do not like.

Favourite and least favourite foods seemed to be equally split with pupils both liking and disliking dairy foods, fruit, vegetables, sandwiches etc. (See table 4) Overall more favourite foods appeared to be listed than least favourite foods, with a higher number of pupils listing all major foods as favourite than had been listed as least favourite. Reassuringly only one fifth of pupils listed fruit as the least favourite item in their lunchbox and often very specific items of fruit were mentioned here. This suggests that, provided disliked fruits are avoided, there is scope to increase the inclusion of fruit into the lunchboxes of the 48% of pupils currently not eating fruit with their packed lunches.

In terms of disposal of unwanted items from the lunchbox the main responses fell into three actions with no clear favourite:

- Leave item in lunchbox
- Swap with a friend
- Throw it away

Table 4: Comparison of favourite and least favourite foods

Favourite foods	Number pupils	% pupils	Least Favourite foods	Number pupils	% pupils
Yoghurt	103	15	Yoghurt	44	6
Cheese snack	40	6	Cheese snack	20	3
Fruit	232	34	Fruit	143	22
Vegetables	37	5	Vegetables	22	3
Sandwiches	202	30	Sandwiches	138	21
Crisps	232	35	Crisps	65	9
Chocolate	174	26	Chocolate	53	8
Chocolate biscuits	47	7	Chocolate biscuits	33	5
Cakes	99	15	Cakes	32	5

In given a completely free choice again a fairly similar pattern emerges in terms of dream lunchbox foods and those to be banished. (See table 5) Once again slightly more foods are listed as dream foods than those to be banished. It is reassuring that an almost equal number of pupils would banish chocolate and chocolate biscuits from their lunchbox as would banish fruit.

Table 5: Comparison of Dream lunchbox foods and those to be banished from the lunchbox.

Dream foods wanted	Number pupils	% pupils	Foods to be banished	Number pupils	% pupils
Yoghurt	26	4	Yoghurt	29	4
Cheese snack	59	9	Cheese snack	26	4
Fruit	215	31	Fruit	136	20
Vegetables	33	5	Vegetables	36	5
Sandwiches	82	12	Sandwiches	92	13
Crisps	80	12	Crisps	80	12
Chocolate	132	19	Chocolate	93	14
Chocolate biscuits	38	6	Chocolate biscuits	17	2
Cakes	36	5	Cakes	27	4

Conclusions and Recommendations

The survey carried out in 2004 has primarily show similar results to those found in the 2003 survey, carried just over one year ago. Overall the lunchboxes continue to have an energy content which is higher than ideal. The excess energy appears to be arising from an over representation of the fatty and sugary foods group and an under representation of fruit, vegetables and starchy carbohydrates. This eating pattern is similar to that displayed by most adults in the UK. Of concern are the high intakes of fat, saturated fat, sugars and particularly salt each day from the lunchbox.

However some interesting changes do appear to have emerged:

- Fat intakes appear to have increased slightly by 2%, half of this increase is from saturated fat
- Carbohydrate intakes have fallen by 3% - primarily from a 2% reduction in total sugars intake
- There has been a 5% increase in the number of lunchboxes reaching the four food groups standard set for primary school meals (26% in 2004 compared to 21% in 2003)
- Regional comparison found a higher proportion of schools in the North West and Midlands achieved a higher compliance with the food group standards that have been laid down for primary school meals. This may be a reflection of the positive outcomes that have been found from the School Fruit and Vegetable Scheme. It will be of interest to monitor whether this trend persists as the scheme is rolled out more widely across the other regions.

The most common items contained within a lunchbox continue to be a white bread, ham or cheese sandwich, accompanied by a packet of crisps, a chocolate bar or cake. This is reflected in the 10 top foods contributing to energy, fat, salt and sugar. Half of lunchboxes contained a serving of fruit or vegetables, and three in five lunchboxes contained a cheese snack (e.g. cheese strings or dunkers).

In order to improve the nutritional profile of the average lunchbox the following steps need to take place:

- Every lunchbox should contain a sandwich – increasing use could be made of softgrain or wholemeal breads
- Despite increased awareness of the need for 5 portions of fruit and vegetables each day from health campaigns and also the free school fruit scheme, fruit or vegetables continue to only be provided in half of the lunchboxes consumed daily. A concerted effort needs to be made into raising both parental and child awareness of the importance of fruit and/or vegetables in the lunchbox.
- The assumption that children don't like fruit and vegetables needs to be dispelled. An equal number of children listed fruit as a favourite food as listed crisps or chocolate and where fruit was listed as a least favourite this usually related to a specific fruit rather than to fruit overall.
- Parental and pupil awareness to the foods contributing to the high intake of salt in the lunchbox needs to be increased.

Appendix 1: Dietitians Recruitment and expression of interest



April 15th 2004

Dear Community Nutrition Group Member,

Re Food Standards Agency (FSA) Project – School Lunchboxes

We are delighted to be able to tell you that the FSA have commissioned CNG to undertake a second survey of school lunchboxes following our successful project work with them last year. The basics of the survey will remain the same, with a few variations that are explained below. Once again we need to seek your support and assistance in carrying out the actual surveys in schools local to you.

The scientific aims of the project will be to carry out a cross sectional survey in primary schools across England to determine the nutritional content of school packed lunches. The schools will represent a range of localities and socio-economic groups. The dietary analysis will present food groups, major brands, macronutrients (energy, fat, saturated fat, carbohydrate, total sugars, protein) and salt content. We will be undertaking analysis and comparison of regional differences between the five regions across England.

In addition this year the survey will involve collection of some qualitative data. This will take the form of three questions which will be presented to at least 50% of the children sampled as a work sheet for completion while the lunchboxes are being surveyed. This will provide a snap shot of children's attitudes towards their lunchbox and its contents.

The brief is to conduct the survey on approx 600 lunchboxes. This will require participation by approx 25 schools, with an aim of surveying 24 pupils per school, aged between 10-11 years. A broad sample of schools from different geographical and socioeconomic areas will be included and sampling will take place across the school week.

This research will provide data on the content of school lunch boxes in order to inform the FSA's nutrition and communications programs. The results will enable the Agency to provide evidence-based messages and advice, on this issue, via the Agency's web-site. The time-scale we have been given for the project is challenging with the requirement of submission of the final report by the end of July.

What we as CNG need to do is:

1. Recruit a cross sectional sample of at least 25 schools (5 in each region of England) take part in the survey and ensure that a minimum of 24 lunchboxes are included at each school.
2. Carry out a survey of the content of school lunch boxes across the week, such that a minimum of 100 lunchboxes will be examined on any given day of the school week.
3. Produce a dietary analysis of foods present in order to show macronutrient content (to include energy, fat, saturated fat, carbohydrate, total sugars, protein), salt content, and food group.

4. Undertake regional comparison of the analysis results.
5. Provide a report to the FSA on these findings

This year once again Kathy and I applied to CNG to provide the project management and data analysis on your behalf. I will once again act as Project Co-ordinator and Kathy Cowbrough will work on the data analysis side of the project. We will be working closely with the committee in order to drive the project through to completion; and CNG will be responsible for liaising with FSA regarding final PR on the project.

We would like to invite all members of CNG to participate in the project by volunteering to undertake a survey of the lunchbox contents of 24 pupils within one of your local schools on a single day during the week commencing 24th May 2004.

What's in for me?

- The chance to support CNG in this prestigious project and to help raise our profile with the FSA
- Cash – we have funding to pay you for 10 hours of your time at a senior 1 rate – equivalent to £175
- We will make the task as easy as possible and will provide sample parental permission letters, data collection forms etc

What's in it for the Schools?

- We have negotiated a small honorarium for the schools to the value of £50. Last year we paid this in the form of nutrition resources. This year we would ask that you work with the schools to ascertain which nutrition resources it would be most appropriate to purchase in order to supplement the resources already available in school.

We will have to meet strict deadlines in order to complete the project on time and so ask that you only volunteer for this project if you are confident that you can complete the survey within the allocated timescale. Information on the duties of the dietitian and projected timelines are attached.

In order to identify the required cross section of schools we will need you to provide some detail on the school/s that you would propose working with to complete this survey. We have therefore provided a form for you to complete in order to indicate some demographics about the schools concerned. We will need this information from you by **30th April 2004**. We will review all forms and select a suitable cross section of schools and will let you know if you have been selected by **7th May 2004** at the latest.

Please note that these timelines are set – if I do not receive your response by the 30th April you will not be able to participate. So please act quickly and don't leave this to another day to deal with. It would be useful if you are able to propose more than one school to work with in order to allow us to achieve our selection of schools in different socioeconomic areas etc. Please complete a separate application form for each school.

The schools should be aware that the FSA will be releasing the names of the participating schools when the data is published. However please be reassured that no individual children will be identified regarding any information that they have provided, unless prior permission has been sought from both the school and parents.

Please return forms by 30th April to:
Angie Jefferson, PO BOX 3645, Bracknell, RG42 3FE
Or fax to 01344 643389 Or e mail to angie@angiejefferson.co.uk

We look forward to your help and support on this prestigious project.

With best wishes



Angie Jefferson
On Behalf of Diane Talbot (CNG Chair) and the CNG Committee

CNG/FSA School Lunch Box Survey 2004

Outline of tasks for Dietitians

To help you decide if you can take part in the national survey, here is a summary of what is required from each “area”.

We hope to make the task as easy as possible and will provide sample letters, standard data collection forms, envelopes etc.

Duties:

- Respond within the deadlines, especially for data collection and returning the completed forms.
- Arrange with the school the day of the visit (during the specified week) and how you will assess each lunch box*
** For example you can decide if you would prefer 2 or more people to do the assessments, or if you will ask permission for the children to be released early for lunch etc*
- Liaise with the schools to ensure parental permission has been sought (if required), and enough time has been left to allow for any bias to appear (i.e. parents sending very healthy lunches!) Example letters will be provided.
- Collect lunch box data for 24+ pupils in Year 6
- Ensure the information on the data form is complete before sending it for analysis – this may include nutritional details or provide labels of specific products that are unlikely to be on the dietary analysis software (e.g. Dairylea Lunchables!)

Payment

You will also need to decide how/ to who you would like to receive your payment. CNG will pay either individuals who are working for example, in a freelance capacity outside of their normal hours or equally CNG can pay a department/ Trust for the time spent on the project. The fee of £175 is based on 10 hours work at Senior I level and is not negotiable. Individuals will be responsible for their own tax/insurance contributions.

Contributions to the School

We have built in costs for each school to be given a selection of health eating resources to the value of £50 – we would ask you to liaise with the school in order to identify the most appropriate resources for them.

CNG/FSA Project: School Lunch Box Survey

Projected Time Line

What	When by
Project plan & costing into FSA	2 nd April
Project sign off by FSA	8 th April
Contact all CNG member with project description, school description checklist, details of obligations	16 th April
Deadline for receiving expressions of interest from Dietitians	30 th April
Allocation and notification of chosen schools/ Dietitians	7 th May
Data Collection week	w/c 24 th May
Completed forms to analyst	4 th June
Dietary Analysis ready for consolidation into report	2 nd July
Final report presented to FSA	23 rd July



CNG/FSA Project: School Lunch Box Survey 2004

Dietitian Expression of Interest



Dietitian Name	
Work Address	
Work Tel Number	
Home/Mobile tel no	
Fax no	
E mail address	

Proposed School – please complete separate sheet for each school

School Name					
Address					
Tel number					
Location/type (please describe)	<i>e.g. Rural, Urban, Inner city etc.</i>				
UK Region (please circle)	North East	North West	Midlands	South West	South East
Ethnicity rate – <i>all schools should have a record of this</i>					
% pupils receiving free school meals					
Proposed sampling day	Monday	Tuesday	Wednesday	Thursday	Friday

Appendix 2: Sample Schools

	Dietitian Name	School Name	Town	Type	% free School meals	% ethnicity	Day of week
South East	37% = 9 schools						
	Melissa Arkinstall	Three Bridges Primary School	Southall, London	Urban			Mon
	Carolyn Jones	St Nicolas CofE School	Newbury	Urban	12		Tues
	Suzanne Bradshaw	Fir Tree County Junior School	Wallingford	Rural	16	3	Tuesday
	Tania Zaidner	Queenswell Community Junior	Whetstone				
	Tania Zaidner	London	Urban	30	20	Mon	
	Tania Zaidner	Edgware Community Junior	Edgware, London	Urban	36	46	Weds
	Judy More	Grove Park Primary	London	urban	30	35	thurs
	Maggie Simkins	West Ashtead Primary	West Ashtead	Urban	4	3	Mon
Laura Mills	Brent Ccounty Primary School	Dartford	Rural	16	3	Weds	
South West	11% = 3 schools						
	Gilly Roberts	St Peters CofE School	Swindon	Urban	7	7	Monday
	Pam Harvey	West Cliff Primary School	Dawlish, Devon	Urban	20	1	Monday
	Vanessa Payne	Torre Cof E Primary School	Torquay	Urban	17	5	Friday
Vanessa Payne	Foxhole Junior School	Paignton	Urban	38	1	Thurs	
Midlands	20% = 5 schools						
	Rosanne Dunkley	Birchensale Middle School	Redditch	Urban	17	13	Weds
	Joanne Micklam	Welbourne Primary School	Peterborough	Urban	25	15	Thurs
	Amanda Avery	Lawn Primary School	Allestree, Berbyshire	Rural	6	5	Thurs
	Sheila Turner	East Dene Junior School	Rotherhem	Inner city	39	10	Friday
	Rachel Cooke	Gladstone Primary School	Peterborough	Inner city	29		Monday
	Rachel Cooke	John Clare Primary School	Helpston	Rural	0	0	Friday
North East	16% = 4 schools						
	Mary Cooper	Kippax North Junior & Infant	Leeds	Urban	10	1	Friday
	Fiona Carter	Tow Lane Millenium Primary	Bishop Auckland	Rural	35	0	Weds
	Ruth Oldham	Western Community Primary	Wallsend	Urban	11	4	Thurs
Liz Cadigan	West Cornforth Primary	West Carhill	Rural	40	2	Thurs	

School Lunchbox Survey 2004

	School					
	Jane Guest	St Nicholas Primary	Hull	Inner city Rural	21	5 weds
	Jane Guest	Withernsea Junior School	Withernsea	Deprived	25	1 Tuesday
North West	15% = 4 schools					
	Lorraine Mullen	Didsbury Primary	Manchester	Urban	10	1 Thurs
	Lorraine Mullen	Varna Street	Manchester	Urban	50	1 Monday
	Phil Rhodes	Heswall Primary School	Wirral	rural	7	4 Thursday
	Linda Convery	Sat Josephs RC Primary School	Heywood	Urban	11	1 Monday

Appendix 3: Survey Data Collection Form 2004

School				
Survey date				
Day of Week	Monday Tuesday Wednesday Thursday Friday			
Pupil Info	Male	Female	Age	Year group
No days have packed lunch per week				

Sandwich:		Filling type	Est. of Amount
Bread types	W/m Gran SG Other:	Ham	
Slice thickness	Slices	Chicken	
Number/portion size	Roll Pitta Ciabatta Chapatti/wrap	Turkey	
	Thin Medium Thick	Other meat	
	1	Tuna	
	2	Pate	
	3	Peanut butter	
	4	Cheese	
	Size/amount	Cheese spread	
	Other/comments/description:	Egg	
	Spread & type if known	Jam/marmalade	
	Yes	Honey	
	No	Marmite	
	Butter		
	Marg		
	R fat		

	<p>Other additions:</p> <p>Tomato ketchup Mayo Salad cream Coleslaw Pickle</p> <p>Est. amt</p>	<p>Choc spread</p> <p>No filling</p> <p>Other: specify</p> <p>Salad Size Amount</p> <p>Tomato Slices</p> <p>Cucumber Slices</p> <p>Lettuce</p> <p>Other:</p>
<p>Drinks Where possible specify size</p>	<p>Drink Brand Type Size</p> <p>Milk</p> <p>Flavoured milk</p> <p>Water – type Tap, bottled, fizzy, flavoured etc.</p> <p>Fruit Juice</p>	<p>Fruit -</p> <p>Apple</p> <p>Orange</p> <p>Satsuma/clementine</p> <p>Banana</p> <p>Pear</p> <p>Grapes</p> <p>Kiwi</p> <p>Dried Fruit - type</p>

	<p>Fruit Juice drink</p> <p>Squash</p> <p>Low cal Squash</p> <p>Sunny Delight</p> <p>Fizzy drink</p> <p>Diet fizzy drink</p> <p>Other:</p>	<p>Other/comments/description</p>
<p>Snack Items</p> <p>Please specify - Brand - Type e.g. crisps - low fat or cereal bar – chewy or crunchy - No of items or pack size</p>	<p>Brand Type Size</p> <p>Crisps</p> <p>Corn/maize snacks</p> <p>Sausage roll</p> <p>Samosas</p>	<p>Pasta:</p> <p>Desc. Amount</p> <p>Pasta Salad</p> <p>Vegetables: give no & size of pieces where possible Type Description No.</p>

	<p>Meat pie/pasty</p> <p>Meat snack e.g. peperami</p> <p>Pizza</p> <p>Cheese portion</p> <p>Cheese strings</p> <p>Cheese dunkers</p> <p>Dairylea lunchables</p> <p>Yoghurt/fromage frais</p> <p>Frube/choobes</p> <p>Plain biscuits</p>	<p>Carrot</p> <p>Tomatoes</p> <p>Cucumber</p> <p>Peppers</p> <p>Other/comments:</p>
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	<p>Chocolate biscuits</p> <p>Biscuit bar</p> <p>Cereal bar</p> <p>Cake/cake bar</p> <p>Chocolate confectionery</p> <p>Sugar confectionery</p> <p>Other/comments:</p>	
<p>Other items Specify:</p>		
<p>Items purchased in school to compliment lunchbox</p>	<p><i>Please record only items that are purchased for consumption at lunchtime e.g. drinks or other snack items</i></p>	

Appendix 4: Dietitians Survey Instructions



FSA School Lunch Boxes Project Instructions for Completion of the Survey Data Collection Form

Please try to complete a minimum of 25 forms per school – restricting collection where ever possible to pupils aged 10-11 years.

The form has been design to be as easy to complete and to provide standardised data collection in each school. The majority of the information is in the form of tick boxes – please use the additional spaces to make notes as required. Following an initial familiarisation with the form collecting the data should be quick and straightforward.

Please provide more information rather than less in order to help our data analyst carry out the nutrition analysis.

General Information Section:

- Please complete fully. We do not require pupil name, but do require sex, age and school year.
- Please complete day of collection as we are aiming to sample evenly across the week.

Sandwiches:

- Please include as much detail as possible
- Bread Type
 - W = white bread
 - w/m = wholemeal bread
 - Gran = granary bread
 - SG = soft grain bread
- Where French bread/ciabatta is used and portion size is difficult to assess please give size as best you can e.g. ciabatta loaf, 3” piece
- Please record other additions as best you can e.g. spread use, sauces, salad additions

Drinks:

- Please record brand where known, drink type and size
- If provided in own refillable bottle please note the drink type and also note that refillable bottle is used in the other column

- Please note if water or other drinks are provided at school therefore negating the need for a lunch box drink.

Fruit:

- Please record what is provided and size if appropriate
- If particular brand is used e.g. Blue Parrot Café/Del Monte then please record this

Pasta/Vegetables

- Please record if these items are provided and describe what and how much is provided

Snack Items:

- The FSA are particularly interested in the brands/items entering lunchboxes and so please record this wherever possible in this section.

Other items:

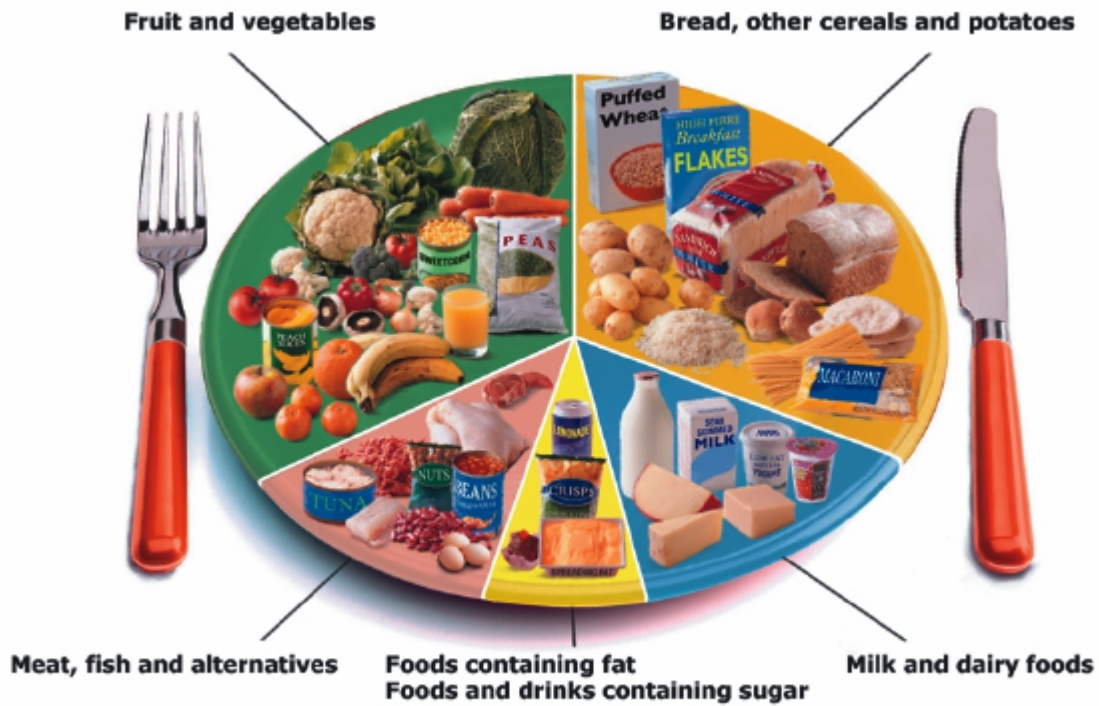
- Please use the 'Other items' section to record any items that do not fit into the sections provided.
- Also use this section to provide any additional information that you feel will be helpful to us in analysis of these forms.
- Please check if any items provided in the lunchbox have already been consumed since leaving home. If possible please ascertain, if possible, whether these items were specifically provided as a break time snack or if these were intended as part of the lunchtime meal.

Items Purchased at School:

- Please only record here items purchased for consumption during the lunchtime period.

Appendix 5: The Balance of Good Health

The Balance of Good Health



There are five main groups of valuable foods

Appendix 6: Qualitative Questionnaire



Lunch Box Questionnaire



Name..... Age.....

Female Male

School Name.....

1. Of all the foods your parents put in your lunch box what is your favourite/ and what is your least favourite?

Favourite

Least Favourite

2. If you could have anything you wanted in your lunch box what would it be?

3. What foods do you think should be banished from your lunch box?

4. What do you do with the foods you get in your lunch box that you don't like? i.e. - do you swap them with your friends? - do you throw them away and buy sweets instead?



Appendix 7: - Food Group Standards

	No Pupils	4 std food groups	% Pupils	3 groups - no Dairy	% pupils	Total no meeting 2 standards	% Meeting both standards
South East							
SchLBS01/04	14	1	7	3	21	4	29
SchLBS02/04	25	4	16	10	40	14	56
SchLBS03/04	26	3	12	1	4	4	15
SchLBS04/04	21	8	38	1	5	9	43
SchLBS05/04	24	6	25	6	25	12	50
SchLBS06/04	27	8	30	7	26	15	56
SchLBS07/04	33	10	30	4	12	14	42
SchLBS08/04	22	1	5	2	9	3	14
South West							
SchLBS09/04	26	3	12	2	8	5	19
SchLBS10/04	23	7	30	3	13	10	43
SchLBS11/04	27	5	19	5	19	10	37
SchLBS12/04	26	5	19	2	8	7	27
Midlands							
SchLBS13/04	23	6	26	3	13	9	39
SchLBS14/04	23	8	35	2	9	10	43
SchLBS15/04	25	8	32	3	12	11	44
SchLBS16/04	25	3	12	1	4	4	16
SchLBS17/04	25	9	36	4	16	13	52
SchLBS18/04	21	12	57	1	5	13	62
North East							
SchLBS19/04	25	8	32	5	20	13	52
SchLBS20/04	13	4	31	0	0	4	31
SchLBS21/04	26	7	27	2	8	9	35
SchLBS22/04	26	7	27	5	19	12	46
SchLBS23/04	30	6	20	8	27	14	47
SchLBS24/04	27	3	11	3	11	6	22
North West							
SchLBS25/04	26	10	38	6	23	16	62
SchLBS26/04	27	6	22	1	4	7	26
SchLBS27/04	24	13	54	8	33	21	88
SchLBS29/04	31	9	29	4	13	13	42
Number pupils	691	180	732	102	405	282	1137
		26.0	26%	15	14%	41	41%

Appendix 8: Calculation of Weighted RNI

The weighted RNI has been calculated for each school according to the age and sex distribution of the pupils. In each school the age and sex of each pupil was known. For each nutrient the following calculation was applied:

$$\frac{(\text{no males age 7-10}) * \text{male RNI age 7-10} + (\text{no females age 7-10}) * \text{female RNI age 7-10} + (\text{no males age 11-12}) * \text{male RNI age 11-14} + (\text{no females age 11-12}) * \text{female RNI age 11-14}}{\text{total number pupils in school}}$$

	M age 9	F age 9	M age 10	F age 10	M age 11	F age 11	M age 12	F age 12	Energy kcal	Protein g	Fat g	Saturates g	C
SchLun01			0	3	7	4			2010	39	78	28	
SchLun02	1		3	5	8	9			1959	42	76	24	
SchLun03	1		8	5	7	5			1968	34	77	24	
SchLun04			2	0	10	9			2035	40	79	25	
SchLun05			2	1	13	7			2054	40	80	25	
SchLun06			9	2	10	6			2018	36	78	25	
SchLun07			6	5	10	12			1965	37	76	24	
SchLun08	6	2	7	7					1876	28	73	23	
SchLun09			2	9	9	6			1941	36	75	24	
SchLun10			1	2	11	9			1915	38	74	23	
SchLun11	1	1	9	4	8	4			1977	34	77	24	
SchLun12			2	3	8	13			1952	39	76	24	
SchLun13			3	2	8	10			1976	39	77	24	
SchLun14	1	2	5	5	2	8			1876	34	73	23	
SchLun15			2	3	13	7			2027	39	79	25	
SchLun16			4	3	9	9			1980	38	77	24	
SchLun17			3	9	3	7			1867	34	73	23	
SchLun18		1	6	8	3	3			1886	32	73	23	
SchLun19	1	1	5	4	8	6			1968	36	77	24	
SchLun20		1	2	4	5	1			1960	35	76	24	
SchLun21			3	2	14	7			2042	39	80	25	
SchLun22			7	8	2	9			1874	34	73	23	
SchLun23*	2	1	5	12	3	7			1864	33	73	23	
SchLun24			4	1	8	14			1965	39	77	24	
SchLun25		1	9	6	4	6			1915	33	75	23	
SchLun26	1	6	3	6	4	7			1869	34	73	23	
SchLun27			8	4	6	6			1958	35	76	24	
SchLun28			5	4	11	11			1516	27	59	19	
No in each age group and	13	16	125	127	204	202	1		1936	36	75	24	



*3 children 1M and 2 F were 8 years old at time of survey but have been included with the 9 year old age group.

Code	RNI used	Energy		Protein g	% Energy	Fat g	% Energy	Sat Fatty acids g	% Energy
		kcal	% RNI		from protein		from Fat	from SFA	
North East									
SchLBS19/049	M (11-14)	716.21	32.30	24.36	13.61	26.05	32.73	9.73	12.23
SchLBS20/04	F (7-10)	676.00	38.90	21.04	12.45	28.26	37.62	12.04	16.02
SchLBS21/04	M (11-14)	754.50	34.00	18.92	10.03	33.35	39.78	13.68	16.32
SchLBS22/04	F (11-14)	730.81	39.60	20.09	11.00	29.94	36.88	11.97	14.74
SchLBS23/04	F (7-10)	696.47	40.00	20.39	11.71	27.57	35.63	11.72	15.14
SchLBS24/04	F (11-14)	656.56	35.60	17.57	10.71	27.28	37.40	10.16	13.92
North West									
SchLBS25/04	M (7-10)	617.14	31.30	16.61	10.77	25.49	37.17	10.58	15.43
SchLBS26/04	F (7-10)	716.10	41.20	18.74	10.47	30.52	38.36	12.54	15.77
SchLBS27/04	M (7-10)	809.33	41.10	21.80	10.78	33.10	36.80	13.81	15.36
SchLBS29/04	F (11-14)	638.76	34.60	17.40	10.90	23.85	33.60	10.80	15.22
		19103.08	980.50	515.92	301.86	805.07	1059.87	333.84	438.23
Average		682.25	35.02	18.43	10.78	28.75	37.85	11.92	15.65
EAR energy	M (7-10)	F (7-10)	M (11-14)	F (11-14)					
	1970kcal	1740kcal	2220kcal	1845kcal					

Nutrition Analysis Results cont.

Code	RNI used	CHO g	% Energy		Total Starch g	% energy		Total sugars g	Sodium		
			from CHO			starch	sugars		mg	% RNI	
South East											
SchLBS01/04	M (11-14)	92.8	48.17		40.24	20.89		44.06	22.87	888.74	55.5
SchLBS02/04	F (11-14)	79.71	51.81		42.42	27.58		42.42	20.49	920.20	57.50
SchLBS03/04	M (7-10)	88.49	49.82		38.09	21.45		38.73	21.80	843.03	70.30
SchLBS04/04	M (11-14)	91.12	48.69		43.47	23.22		36.66	19.59	1077.72	67.40
SchLBS05/04	M (11-14)	83.78	53.45		39.67	25.31		37.32	23.81	783.48	49.00
SchLBS06/04	M (11-14)	81.90	52.93		40.69	26.30		36.41	23.53	749.74	46.90
SchLBS07/04	F (11-14)	90.00	47.85		44.48	23.65		37.78	20.09	1040.18	65.00
SchLBS08/04	M (7-10)	91.98	51.42		45.53	25.45		41.31	23.10	941.29	78.40
South West											
SchLBS09/04	F (7-10)	76.22	50.58		34.06	22.61		28.05	18.61	695.48	58.00
SchLBS10/04	M (11-14)	101.24	47.59		55.57	26.12		43.40	20.40	1196.14	74.80
SchLBS11/04	M (7-10)	94.90	49.76		38.94	20.42		46.30	24.28	970.40	80.90
SchLBS12/04	F (11-14)	86.36	49.59		39.91	22.91		36.41	20.91	974.24	60.90
Midlands											
SchLBS13/04	F (11-14)	104.99	48.60		46.68	21.61		49.88	23.09	1084.97	67.80
SchLBS14/04	F (11-14)	84.09	48.56		37.18	21.47		36.19	20.90	853.32	53.30
SchLBS15/04	M (11-14)	85.12	50.81		34.20	20.42		43.26	25.82	781.86	48.90
SchLBS16/04	M (11-14)	84.00	47.95		41.50	23.69		29.56	16.87	904.06	56.50
SchLBS17/04	F (7-10)	101.39	51.44		43.39	22.01		52.37	26.57	867.54	72.30
SchLBS18/04	F (7-10)	88.54	49.95		42.82	24.16		42.49	23.97	855.64	71.30
North East											
SchLBS19/049	M (11-14)	98.43	51.54		50.96	26.68		38.40	20.11	1093.65	68.40
SchLBS20/04	F (7-10)	74.73	41.46		34.97	19.40		34.40	19.08	825.00	68.70
SchLBS21/04	M (11-14)	99.41	49.41		47.54	23.63		44.21	21.97	988.57	61.80
SchLBS22/04	F (11-14)	95.61	49.06		44.88	23.03		36.26	18.61	1117.17	69.80
SchLBS23/04	F (7-10)	97.46	52.47		43.47	23.40		49.35	26.57	953.74	79.50
SchLBS24/04	F (11-14)	89.75	51.26		39.68	22.66		44.47	25.40	930.13	58.10

Code	RNI used	CHO g	% Energy		% energy starch	Total sugars g	% energy sugars	Sodium		
			from CHO	Total Starch g				mg	% RNI	
North West										
SchLBS25/04	M (7-10)	84.97	51.63	40.29	24.48	39.73	24.14	879.47	73.30	
SchLBS26/04	F (7-10)	93.80	49.12	45.83	24.00	42.16	22.08	1008.93	84.10	
SchLBS27/04	M (7-10)	112.44	52.10	51.32	23.78	53.03	24.57	1157.82	40.30	
SchLBS29/04	F (11-14)	92.97	54.58	35.06	20.58	52.04	30.55	801.25	50.10	
		2546.20	1401.60	1182.84	650.91	1156.65	629.78	26183.76	1788.80	
Average		90.94	50.06	42.24	23.25	41.31	22.49	935.13	63.89	
			M (7-10)				F (11-14)			
		RNI for Na	1200mg				1600mg			
		FSA rec	5g salt/2g Na (2000mg)				6g salt/2.5g Na (2500mg)			

Code	RNI used	Energy	EAR for energy	%EAR	Protein g	RNI as g protein	% RNI as protein	Fat g	RNI as g fat	% RNI as Fat
North East										
SchLBS19/049	M (11-14)	716	2220	32	24	42	58	26	86	30
SchLBS20/04	F (7-10)	676	1740	39	21	28	74	28	68	42
SchLBS21/04	M (11-14)	755	2220	34	19	42	45	33	86	39
SchLBS22/04	F (11-14)	731	1845	40	20	41	49	30	72	42
SchLBS23/04	F (7-10)	696	1740	40	20	28	72	28	68	41
SchLBS24/04	F (11-14)	657	1845	36	18	41	43	27	72	38
North West										
SchLBS25/04	M (7-10)	617	1970	31	17	28	59	25	77	33
SchLBS26/04	F (7-10)	716	1740	41	19	28	66	31	68	45
SchLBS27/04	M (7-10)	809	1970	41	22	28	77	33	77	43
SchLBS28/04	F (11-14)	639	1845	35	17	41	42	24	72	33
Average		682		35	18		52	29		38

Nutrition Analysis Results cont.

Code	RNI used	Saturated Fatty acids g	RNI as g SFA	% RNI as SFA	CHO g	RNI as g CHO	% RNI as CHO	Sodium mg	RNI	% RNI as sodium
South East										
SchLBS01/04	M (11-14)	12	27	44	93	296	31	889	1600	56
SchLBS02/04	F (11-14)	10	23	42	80	246	32	920	1600	58
SchLBS03/04	M (7-10)	13	24	52	88	262	34	843	1200	70
SchLBS04/04	M (11-14)	12	27	44	91	296	31	1078	1600	67
SchLBS05/04	M (11-14)	9	27	32	84	296	28	783	1600	49
SchLBS06/04	M (11-14)	9	27	32	82	296	28	750	1600	47
SchLBS07/04	F (11-14)	14	23	60	90	246	37	1040	1600	65
SchLBS08/04	M (7-10)	12	24	49	92	262	35	941	1200	78
South West										
SchLBS09/04	F (7-10)	8	21	36	76	232	33	695	1200	58
SchLBS10/04	M (11-14)	18	27	65	101	296	34	1196	1600	75
SchLBS11/04	M (7-10)	12	24	48	95	262	36	970	1200	81
SchLBS12/04	F (11-14)	12	23	55	86	246	35	974	1600	61
Midlands										
SchLBS13/04	F (11-14)	17	23	74	105	246	43	1085	1600	68
SchLBS14/04	F (11-14)	11	23	50	84	246	34	853	1600	53
SchLBS15/04	M (11-14)	11	27	41	85	296	29	782	1600	49
SchLBS16/04	M (11-14)	13	27	49	84	296	28	904	1600	57
SchLBS17/04	F (7-10)	13	21	62	101	232	44	868	1200	72
SchLBS18/04	F (7-10)	13	21	61	89	232	38	856	1200	71

Code	RNI used	Saturated Fatty acids g	RNI as g SFA	% RNI as SFA	CHO g	RNI as g CHO	% RNI as CHO	Sodium mg	RNI	% RNI as sodium
North East										
SchLBS19/049	M (11-14)	10	27	36	98	296	33	1094	1600	68
SchLBS20/04	F (7-10)	12	21	57	75	232	32	825	1200	69
SchLBS21/04	M (11-14)	14	27	50	99	296	34	989	1600	62
SchLBS22/04	F (11-14)	12	23	53	96	246	39	1117	1600	70
SchLBS23/04	F (7-10)	12	21	55	97	232	42	954	1200	80
SchLBS24/04	F (11-14)	10	23	45	90	246	36	930	1600	58
North West										
SchLBS25/04	M (7-10)	11	24	44	85	262	32	879	1200	73
SchLBS26/04	F (7-10)	13	21	59	94	232	40	1009	1200	84
SchLBS27/04	M (7-10)	14	24	57	112	262	43	1158	1200	40
SchLBS28/04	F (11-14)	11	23	48	93	246	38	801	1600	50
Average		12		50	91		35	935		64

Appendix 10: - Sandwich Choices and Fillings

Figures shown as total numbers and % of lunch boxes shown in brackets
 Total number of lunchboxes = 688

	White	Brown	Wholem eal	Granary	Soft Grain	Total
Sandwich/rolls	472 (69%)	1 (0.1%)	73 (11%)	9 (1.3%)	9 (1.3%)	564 (82%)
Ciabatta bread	2 (0.3%)	-	-	-	-	2 (0.3%)
Wraps	6 (0.9%)	-	-	-	-	6 (0.9%)
Crackers	5 (0.7%)	-	-	-	-	5 (0.7%)
Other bread items	3 (0.4%)	-	-	-	-	3 (0.4%)
Total bread based options	485 (70%)	1 (0.1%)	73 (11%)	9 (1.3%)	9 (1.3%)	580 (84%)

Sandwich/Bread Fillings	Number	Percentage lunchboxes
Ham	187	27%
Cheese/cheese spread	146	21%
Chicken	76	11%
Tuna	56	8%
Turkey	37	5%
Jam/marmalade/honey	33	5%
Other meats	19	3%
Peanut Butter	20	3%
Marmite	18	3%
Choc Spread	20	3%
Pate/meat paste	12	2%
Beef/Corned Beef	10	<2%
Egg	9	1%
Veggie pate/Houmous	3	1%

Salmon/other fish	3	0.4%
Sandwich spread	1	0.1%
Total	650	(94%)

NB Sandwiches may have contained more than one filling

Appendix 11: Fruit Choices

Total number of lunchboxes = 688

	Number	% lunchboxes
Apple	126	18%
Banana	59	9%
Orange / Satsuma	50	7%
Grapes	46	7%
Pear	25	4%
Plum	8	1%
Dried fruit	17	2%
Melon	7	1%
Kiwi	8	1%
Other fruit	14	2%
Total	360	52%

Appendix 12 – Crisp and Savoury Snacks

Total number of lunchboxes = 688

Brand	Type	Number	% Lunch boxes
Walkers	Crisps	206	29.9
KP	Hula Hoops	28	4.1
Walkers	Wotsits	27	3.9
Tesco	Select crisps	26	3.8
Walkers	Quavers	24	3.5
misc	Crisps	21	3.1
KP	Skips	17	2.5
McVities	Mini Cheddars	17	2.5
Asda	Crisps	13	1.9
McCoys	Crisps	12	1.7
Walkers	Monster Munch	10	1.5
Morrisons	Crisps	8	1.2
Wolf	Pom Bear	8	1.2
Walkers	French Fries	7	1.0
	Doritos	7	1.0
KP	Space Raiders	4	0.6
Sainsburys	Crisps	4	0.6
Golden Wonder	Nik Naks	4	0.6
	Frazzels	4	0.6
Golden Wonder	Crisps	3	0.4
KP	Discos	3	0.4
	Pringles	3	0.4
	Frisps	3	0.4
Smiths	Crisps	3	0.4
Bobbies	Spirals	2	0.3
KP	Snacks	2	0.3
	Wheat Crunchies	2	0.3
Tesco	Crisps	1	0.1
Safeway	Crisps	1	0.1
	Weetos	1	0.1
KP	Crisps	1	0.1
Seabrook	Crisps	1	0.1
	Total	473	69

Appendix 13: Biscuits and Chocolate Bars

Total number of lunchboxes = 688

Summary:

	Number	% lunchboxes
Fully chocolate coated biscuits	139	20
Part chocolate coated biscuit	28	4
Chocolate confectionery	162	24
Biscuits	67	10
	402	58

Detailed data:

Brand	Type	Number	% Lunchboxes
Misc	Biscuits	74	11
Nestle	Kit kat	46	7%
McVities	Penguin Biscuit	37	5%
Masterfoods	Twix bar	30	4%
Cadburys	Time Out	25	4%
Foxes	Rocky	18	3%
Masterfoods	Milky way/ Magic Stars	11	2%
Nestle	Blue Ribbon bar	13	2%
Lidl	Wagon wheel/Jammie Dodgers	12	2%
Nestle	Breakaway	9	1%
	Wagon Wheel	4	1%
Jacobs	Club biscuit	5	1%
Masterfoods	Mars Bar	7	1%
Jacobs	Iced/Choc Gems	8	1%
Foxes	Echo	7	1%
Nestle	Toffee Crisp	4	1%
Cadburys	Chocolate Fingers	6	1%
Cadburys	Diary Milk	8	1%
Tesco	Chocolate Digestive	7	1%
Foxes	Triple	7	1%
Maryland	Choc Chip cookies	6	1%
Cadburys	Brunch bar	4	1%
Kinder	Bueno	5	1%
Masterfoods	Bounty	5	1%
Asda	Take a Break	6	1%

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Tesco	Crunchy Caramel Biscuit	4	1%
Tesco	Milk Choc Biscuit bar	4	1%
Jacobs	Little Gems	8	1%
Cadburys	Animal bites	2	0%
Burtens	Viscount Biscuit	2	0%
Cadburys	Crème Egg	1	0%
Foxes	Party Rings	2	0%
Nestle	Milky bar	2	0%
Nestle	Smarties	2	0%
McVities	Digestive	3	0%
Foxes	Caramel bar	3	0%
Kinder	Happy Hippo Bar	2	0%
Cadburys	Flake	2	0%
Masterfoods	M&M's	2	0%
Tesco	Chocolate breakaway biscuit	2	0%
McVities	Go Ahead Biscuits	3	0%
Foxes	Classic	3	0%
Nestle	Milk Chocolate bar	2	0%
Nestle	Rolo's	1	0%
Asda	Puffin orange	3	0%
Asda	Chocolate Digestive	1	0%
Asda	Caramel bar	2	0%
Tesco	Cookie sun bake	1	0%
Morrisons	Break	1	0%
McVities	Taxi	3	0%
McVities	Gold biscuit bar	1	0%
Burtens	Jamie Dodgers	3	0%
Lyons	Digestive Bar	3	0%
Tunnocks	Caramel Wafer	4	0%
	Total	402	58%

Appendix 14: Sugar Confectionery

Total number of lunchboxes = 688

Brand	Type	Number	% Lunchboxes
Kellogg's	Fruit Winders	13	2%
Kellogg's	Fruit Spurters	2	0.3%
Masterfoods	Starburst	2	0.3%
	Boiled Sweets	1	0.2%
	Flumps	1	0.2%
	Total	19	2.9%

Appendix 15: Yoghurts and Dairy Items

Total number of lunchboxes = 668

Summary:

	Number	% Lunchboxes
Yoghurts	114	17
Tubes yoghurt/Frubes	61	9
Low fat yoghurts	19	3
Fromage Frais	32	5
Mousse/desserts	27	4
Rice	1	0
	259	38

Detailed data - Yoghurts:

Brand	Type	Number	% Lunchboxes
Muller	Corners Yoghurt	24	3.5%
Yoplait	Yoghurt	43	6.3%
Yoplait	Frubes	50	7.3%
Nestle	Munch Bunch	9	1.3%
Yoplait	Petit Filous	12	1.7%
Muller	Yoghurt	11	1.6%
Yoplait	Fromage Frais	6	0.9%
Tesco	Low fat yoghurt	11	1.6%
Asda	Yoghurt	6	0.9%

Muller	Yoghuz	2	0.3%
Muller	Fromage Frais	6	0.9%
Muller	Corners Squeezers	4	0.6%
Ski	Yoghurt	2	0.3%
Yeo Valley	Yoghurt	2	0.3%
Misc	Yoghurt	5	0.7%
Muller	Rice	2	0.3%
Safeways	Low fat yoghurt	2	0.3%
Cadbury	Chocolate yoghurt/mousse	7	1.0%
Petit Filous	Pouches	3	0.4%
Yoplait	Yo GO GO	2	0.3%
Danone	Yoghurt	5	0.7%
Muller	Light Yoghurt	1	0.1%
Muller	Rice	1	0.1%
Asda	Fromage Frais	6	0.9%
Scooby Doo	Yoghurt	2	0.3%
St Ivel	Shape yoghurt	5	0.7%
Marks & Spencers	Yoghurt	2	0.3%
Ambrosia	Custard/rice	3	0.4%
Sesame Street	Yoghurt	3	0.4%
Weight Watchers	Fromage Frais	1	0.1%
Nestle	Fromage Frais	1	0.1%
	Total	239	35%

Branded Cheese Snacks

Brand	Type	Number	% Lunchboxes
Golden Vale	Cheese Strings	48	7%
	Baby Bel	17	2.5%
Dairy Lea	Dunkers	12	1.7%
Dairy Lea	Lunchables stackers	6	0.9%
Dairylea	Jumbo munch	5	0.7%
Sainsburys	Cheese Strings	4	0.6%
Laughing Cow	Cheez Dippers	4	0.6%
	Total	96	14%

Appendix 16: Cakes and Cereal Bars

Total number of lunchboxes = 688

Branded Cake items

Summary:

	Number	% lunchboxes
Jaffa cakes	20	3
Individual cake bars	104	15
Healthy cake bars	10	1
Tarts	8	1
Cereal bars	55	8
	199	28

Detailed Data:

Brand	Type	Number	% lunchboxes
Cadburys	Mini Roll	23	3.3%
McVities	Jaffa cakes - ord & mini	18	2.6%
Misc	Chocolate muffin	9	1.3%
McVities	Galaxy cake bar	8	1.2%
Mr Kipling	Choc Chip cake bar	7	1.0%
	Flapjack	7	1.0%
Cadburys	Milk Chocolate Bar	5	0.7%
Mr Kipling	Sponge cake	5	0.7%
	Home made Sponge	5	0.7%
	Misc cake	5	0.7%
Mr Kipling	Bakewell Tart	4	0.6%
Lyons	Choc cup cake	4	0.6%
	Iced Cake	4	0.6%
	Jam tart	4	0.6%
McVities	Go Ahead Cake	3	0.4%
	Raisin Cake	3	0.4%
Asda	Jaffa bar	2	0.3%
	Rolo mini cake	2	0.3%
	Scone	2	0.3%
	Angel Cake	2	0.3%
	Rice Krispy/Cornflake cake	2	0.3%
	Malt Loaf	2	0.3%
	Donut	2	0.3%
Bakers	Choc mini roll	1	0.2%

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Cadburys	Caramel Cake bar	1	0.1%
Cadburys	Cafe cake bar	1	0.1%
Cadburys	Fudge Cake bar	1	0.1%
Tesco	Value cake bar	1	0.1%
Sainsburys	Mini Choc roll	1	0.1%
Sainsburys	Blue Parrott Café Cake	1	0.1%
	Swiss Roll	1	0.1%
	Danish Pastry	1	0.1%
	Apple Cake	1	0.1%
	Trifle sponge fingers	1	0.1%
	Apple pie	1	0.1%
	Snack a Jack rice cake	1	0.1%
	Strawberry Cheesecake	1	0.1%
	Total	144	21%

Cereal Bars

Total number of lunchboxes = 688

Brand	Type	Number	% lunchboxes
Kelloggs	Nutrigrain bars	12	1.7%
Tesco	Cereal bar/breakfast bar	5	0.7%
Nestle	Nesquick cereal bar	5	0.7%
Kelloggs	Rice Krispies cereal & milk bar	4	0.6%
Kelloggs	Frosties cereal & milk bar	4	0.6%
Asda	Cereal bar	3	0.5%
Quaker	Harvest Chewy bar	3	0.4%
Sainsburys	Cereal Bar	2	0.3%
Alpen	Creal bar	2	0.3%
Misc	Cereal bars	2	0.3%
Sainsburys	Cereal bar Chic nut chip	2	0.3%
	Sesame snaps	2	0.3%
Nestle	Cheerios cereal & milk bar	2	0.3%
Masterfoods	Tracker bar	2	0.3%
Kelloggs	Crunchy Nut cereal & milk bar	1	0.1%
Traidcraft	Geobar	1	0.1%
Kelloggs	Coco pops cereal and milk bar	1	0.1%
Jordans	Frusili bar	1	0.1%
McVities	Go Ahead cereal bar	1	0.1%
	Total	55	8%

Appendix 17: Drinks

Total number of lunchboxes = 688

Summary:

	Number	% lunchboxes
Fruit Squash	257	37
Tap/Bottled water	115	17
Fruit Juice	99	14
Fruit Juice Drink	70	10
Low calorie/sugar squash	43	6
Canned drink	37	5
Canned Low calorie drink	12	2
Milk or milk shake	14	2
Flavoured water	3	<1
Energy drinks	4	<1
	654	95

Detailed data:

Brand	Type	Number	% Lunchboxes
Misc	Squash	156	22.7
Misc	water	107	15.6
Capri Sun	Fruit Drink	52	7.6
SmithKline Beecham	Ribena	27	3.9
Solerita	Fruit Juice	27	3.9
Robinsons	Fruit Shoot	25	3.6
Robinsons	Squash	23	3.3
Tesco	Squash	22	3.2
Misc	Orange juice	20	2.9
Misc	Apple juice	17	2.5
Tesco	Orange Juice	13	1.9
Asda	Squash	12	1.7
Calypso	Fruit drinks	12	1.7
Robinsons	Low Cal Squash	11	1.6
	Sunny Delight	10	1.5
Tesco	Apple Juice	9	1.3
	Panda Pop	8	1.2
Asda	Apple Juice	8	1.2
	Five Alive	7	1.0
	7 Up/Sprite	7	1.0

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Coca Cola	Coke	7	1.0
	Vimto	7	1.0
Coca Cola	Diet Coke	5	0.7
Misc	Canned drinks	5	0.7
Sainsburys	Squash	4	0.6
Volvic	Bottled water	4	0.6
SmithKline Beecham	Ribena Light	4	0.6
SmithKline Beecham	Lucozade/sport	3	0.4
SmithKline Beecham	Ribena Tooth kind	3	0.4
Nestle	Ski milk Drink	3	0.4
	Yoghurt Drink	3	0.4
Muller	Vitality Yoghurt drink	3	0.4
Asda	Diet canned drink	3	0.4
	Milk	3	0.4
Rubicon	Fruit Juice	3	0.4
Yazoo	Milk shake	2	0.3
The Simpsons	Flavoured water	2	0.3
Caledonian	Bottled water	2	0.3
Buxton	Bottled water	2	0.3
Barr's	Iron Bru	2	0.3
Spar	No sugar added Canned drink		0.2
Aldi	Canned drinks	1	0.2
Merry Mate	Canned Drinks	1	0.2
	Tango	1	0.2
Doctor Pepper	Cola	1	0.2
Asda	Orange Juice	1	0.1
	Powerade	1	0.1
Virgin	Coke	1	0.1
Tesco	Sugar Free Canned Drink	1	0.1
Spar	No Sugar canned	3	0.1
Silver Spring	Pop star squash	1	0.1
Misc	Flavored water	1	0.1
Misc	Grapefruit juice	1	0.1
Britvic	H2O	1	0.1
	Total	654	95

Appendix 18: Comparison of schools with low and high free school meal rates

	Energy kcal	% RNI	Protein g	% Energy from protein	Fat g	% Energy from Fat	Sat Fatty acids g	% Energy from SFA
Free school meals <18%								
SchLBS01/04	722.37	32.5	19.81	10.97	31.88	39.72	11.91	14.84
SchLBS02/04	576.90	31.30	15.42	10.69	23.85	37.20	9.51	14.83
SchLBS03/04	666.08	33.80	15.63	9.39	29.80	40.26	12.63	17.06
SchLBS07/04	705.37	38.20	18.81	10.67	32.22	41.11	13.62	17.38
SchLBS08/04	670.81	34.10	13.92	8.30	29.80	39.98	11.84	15.89
SchLBS09/04	565.03	32.50	14.28	10.11	22.98	36.60	7.70	12.27
SchLBS11/04	715.50	36.30	19.46	10.88	29.99	37.74	11.63	14.64
SchLBS13/04	810.09	43.90	23.02	11.37	36.43	40.47	16.66	18.51
SchLBS15/04	628.22	28.30	17.37	11.06	24.46	35.04	11.03	15.81
SchLBS18/04	664.73	38.20	17.93	10.79	28.81	39.00	12.98	17.57
SchLBS19/049	716.21	32.30	24.36	13.61	26.05	32.73	9.73	12.23
SchLBS21/04	754.50	34.00	18.92	10.03	33.35	39.78	13.68	16.32
SchLBS25/04	617.14	31.30	16.61	10.77	25.49	37.17	10.58	15.43
SchLBS29/04	638.76	34.60	17.40	10.90	23.85	33.60	10.80	15.22
	9452	481	253	150	399	530	164	218
Average	675	34	18	11	28	38	12	16
Free school meals 18% or >								
	Energy kcal	% RNI	Protein g	% Energy from protein	Fat g	% Energy from Fat	Sat Fatty acids g	% Energy from SFA
SchLBS04/04	701.83	31.60	20.72	11.81	29.86	38.29	12.05	15.46
SchLBS05/04	587.76	26.50	15.80	10.75	22.82	34.95	8.59	13.16
SchLBS06/04	580.27	26.10	14.04	9.68	22.96	35.62	8.79	13.64
SchLBS10/04	797.64	35.90	21.06	10.56	36.99	41.74	17.55	19.81
SchLBS12/04	653.12	35.40	17.46	10.70	28.20	38.86	12.43	17.13
SchLBS14/04	649.34	35.20	17.00	10.47	28.37	39.32	11.23	15.57

SchLBS16/04	656.98	29.60	15.77	9.60	30.54	41.84	13.41	18.37
SchLBS17/04	739.16	42.50	21.50	11.63	29.70	36.16	13.25	16.14
SchLBS20/04	676.00	38.90	21.04	12.45	28.26	37.62	12.04	16.02
SchLBS22/04	730.81	39.60	20.09	11.00	29.94	36.88	11.97	14.74
SchLBS23/04	696.47	40.00	20.39	11.71	27.57	35.63	11.72	15.14
SchLBS24/04	656.56	35.60	17.57	10.71	27.28	37.40	10.16	13.92
SchLBS26/04	716.10	41.20	18.74	10.47	30.52	38.36	12.54	15.77
	8842	458	241	142	373	493	156	205
Average	680	35	19	11	29	38	12	16

Comparison of schools with low and high free schools meals cont:

	CHO g	% Energy from CHO	Total sugars g	% energy sugars	Sodium mg	% RNI
Free school meals <18%						
SchLBS01/04	92.8	48.17	44.06	22.87	888.74	55.5
SchLBS02/04	79.71	51.81	42.42	20.49	920.20	57.50
SchLBS03/04	88.49	49.82	38.73	21.80	843.03	70.30
SchLBS07/04	90.00	47.85	37.78	20.09	1040.18	65.00
SchLBS08/04	91.98	51.42	41.31	23.10	941.29	78.40
SchLBS09/04	76.22	50.58	28.05	18.61	695.48	58.00
SchLBS11/04	94.90	49.76	46.30	24.28	970.40	80.90
SchLBS13/04	104.99	48.60	49.88	23.09	1084.97	67.80
SchLBS15/04	85.12	50.81	43.26	25.82	781.86	48.90
SchLBS18/04	88.54	49.95	42.49	23.97	855.64	71.30
SchLBS19/049	98.43	51.54	38.40	20.11	1093.65	68.40
SchLBS21/04	99.41	49.41	44.21	21.97	988.57	61.80
SchLBS25/04	84.97	51.63	39.73	24.14	879.47	73.30
SchLBS29/04	92.97	54.58	52.04	30.55	801.25	50.10
	1269	706	545	298	11896	852
Average	91	50	39	21	850	61
Free school meals >18%						
	CHO g	% Energy from CHO	Total sugars g	% energy sugars	Sodium mg	% RNI
SchLBS04/04	91.12	48.69	36.66	19.59	1077.72	67.40
SchLBS05/04	83.78	53.45	37.32	23.81	783.48	49.00
SchLBS06/04	81.90	52.93	36.41	23.53	749.74	46.90
SchLBS10/04	101.24	47.59	43.40	20.40	1196.14	74.80
SchLBS12/04	86.36	49.59	36.41	20.91	974.24	60.90
SchLBS14/04	84.09	48.56	36.19	20.90	853.32	53.30
SchLBS16/04	84.00	47.95	29.56	16.87	904.06	56.50

SchLBS17/04	101.39	51.44	52.37	26.57	867.54	72.30
SchLBS20/04	74.73	41.46	34.40	19.08	825.00	68.70
SchLBS22/04	95.61	49.06	36.26	18.61	1117.17	69.80
SchLBS23/04	97.46	52.47	49.35	26.57	953.74	79.50
SchLBS24/04	89.75	51.26	44.47	25.40	930.13	58.10
SchLBS26/04	93.80	49.12	42.16	22.08	1008.93	84.10
	1165	644	515	284	12241	841
Average	90	50	40	22	942	65

Appendix 19: Regional Comparison of nutritional content

Code	No of pupils	RNI used	Energy		Protein g	% Energy		% Energy from Fat	Sat Fatty acids g	% energy sat fat
			kcal	% RNI		from protein	Fat g			
South East										
SchLBS01/04	14	M (11-14)	722.37	32.5	19.81	10.97	31.88	39.72	11.91	14.84
SchLBS02/04	25	F (11-14)	576.90	31.30	15.42	10.69	23.85	37.20	9.51	14.83
SchLBS03/04	26	M (7-10)	666.08	33.80	15.63	9.39	29.80	40.26	12.63	17.06
SchLBS04/04	21	M (11-14)	701.83	31.60	20.72	11.81	29.86	38.29	12.05	15.46
SchLBS05/04	24	M (11-14)	587.76	26.50	15.80	10.75	22.82	34.95	8.59	13.16
SchLBS06/04	27	M (11-14)	580.27	26.10	14.04	9.68	22.96	35.62	8.79	13.64
SchLBS07/04	33	F (11-14)	705.37	38.20	18.81	10.67	32.22	41.11	13.62	17.38
SchLBS08/04	22	M (7-10)	670.81	34.10	13.92	8.30	29.80	39.98	11.84	15.89
	192	Average	651.42	31.76	16.77	10.28	27.90	38.39	11.12	15.28
South West										
SchLBS09/04	26	F (7-10)	565.03	32.50	14.28	10.11	22.98	36.60	7.70	12.27
SchLBS10/04	23	M (11-14)	797.64	35.90	21.06	10.56	36.99	41.74	17.55	19.81
SchLBS11/04	27	M (7-10)	715.50	36.30	19.46	10.88	29.99	37.74	11.63	14.64
SchLBS12/04	26	F (11-14)	653.12	35.40	17.46	10.70	28.20	38.86	12.43	17.13
	102	Average	682.82	35.03	18.07	10.56	29.54	38.74	12.33	15.96
Midlands										
SchLBS13/04	23	F (11-14)	810.09	43.90	23.02	11.37	36.43	40.47	16.66	18.51
SchLBS14/04	23	F (11-14)	649.34	35.20	17.00	10.47	28.37	39.32	11.23	15.57
SchLBS15/04	25	M (11-14)	628.22	28.30	17.37	11.06	24.46	35.04	11.03	15.81
SchLBS16/04	25	M (11-14)	656.98	29.60	15.77	9.60	30.54	41.84	13.41	18.37
SchLBS17/04	22	F (7-10)	739.16	42.50	21.50	11.63	29.70	36.16	13.25	16.14
SchLBS18/04	21	F (7-10)	664.73	38.20	17.93	10.79	28.81	39.00	12.98	17.57
	139	Average	691.42	36.28	18.77	10.82	29.72	38.64	13.09	17.00

North East										
SchLBS19/049	25	M (11-14)	716.21	32.30	24.36	13.61	26.05	32.73	9.73	12.23
SchLBS20/04	13	F (7-10)	676.00	38.90	21.04	12.45	28.26	37.62	12.04	16.02
SchLBS21/04	26	M (11-14)	754.50	34.00	18.92	10.03	33.35	39.78	13.68	16.32
SchLBS22/04	26	F (11-14)	730.81	39.60	20.09	11.00	29.94	36.88	11.97	14.74
SchLBS23/04	30	F (7-10)	696.47	40.00	20.39	11.71	27.57	35.63	11.72	15.14
SchLBS24/04	27	F (11-14)	656.56	35.60	17.57	10.71	27.28	37.40	10.16	13.92
	147	Average	705.09	36.73	20.40	11.59	28.74	36.67	11.55	14.73
North West										
SchLBS25/04	26	M (7-10)	617.14	31.30	16.61	10.77	25.49	37.17	10.58	15.43
SchLBS26/04	27	F (7-10)	716.10	41.20	18.74	10.47	30.52	38.36	12.54	15.77
SchLBS27/04	25		809.33	41.10	21.80	10.78	33.10	36.80	13.81	15.36
SchLBS28/04	31	F (11-14)	638.76	34.60	17.40	10.90	23.85	33.60	10.80	15.22
	109		695.33	37.05	18.64	10.73	28.24	36.48	11.93	15.45
Total Average			779.78	40.01	21.07	12.33	32.89	43.30	13.64	17.90
		M (7-10)	F (7-10)	M (11-14)	F (11-14)					
	RNI for energy	1970kcal	1740kcal	2220kcal	1845kcal					

Regional Comparison cont.

Code	No of pupils	RNI used	CHO g	% Energy from CHO	Total sugars g	% energy sugars	Total Starch	% energy Starch	Sodium mg	% RNI
South East										
SchLBS01/04	14	M (11-14)	92.8	48.17	44.06	22.87	40.24	20.89	888.74	55.5
SchLBS02/04	25	F (11-14)	79.71	51.81	42.42	20.49	42.42	27.58	920.20	57.50
SchLBS03/04	26	M (7-10)	88.49	49.82	38.73	21.80	38.09	21.45	843.03	70.30
SchLBS04/04	21	M (11-14)	91.12	48.69	36.66	19.59	43.47	23.22	1077.72	67.40
SchLBS05/04	24	M (11-14)	83.78	53.45	37.32	23.81	39.67	25.31	783.48	49.00
SchLBS06/04	27	M (11-14)	81.90	52.93	36.41	23.53	40.69	26.30	749.74	46.90
SchLBS07/04	33	F (11-14)	90.00	47.85	37.78	20.09	44.48	23.65	1040.18	65.00
SchLBS08/04	22	M (7-10)	91.98	51.42	41.31	23.10	45.53	25.45	941.29	78.40
Average	192		87.47	50.52	39.34	21.91	41.82	24.23	905.55	61.25
South West										
SchLBS09/04	26	F (7-10)	76.22	50.58	28.05	18.61	34.06	22.61	695.48	58.00
SchLBS10/04	23	M (11-14)	101.24	47.59	43.40	20.40	55.57	26.12	1196.14	74.80
SchLBS11/04	27	M (7-10)	94.90	49.76	46.30	24.28	38.94	20.42	970.40	80.90
SchLBS12/04	26	F (11-14)	86.36	49.59	36.41	20.91	39.91	22.91	974.24	60.90
Average	102		89.68	49.38	38.54	21.05	42.12	23.02	959.07	68.65
Midlands										
SchLBS13/04	23	F (11-14)	104.99	48.60	49.88	23.09	46.68	21.61	1084.97	67.80
SchLBS14/04	23	F (11-14)	84.09	48.56	36.19	20.90	37.18	21.47	853.32	53.30
SchLBS15/04	25	M (11-14)	85.12	50.81	43.26	25.82	34.20	20.42	781.86	48.90
SchLBS16/04	25	M (11-14)	84.00	47.95	29.56	16.87	41.50	23.69	904.06	56.50
SchLBS17/04	22	F (7-10)	101.39	51.44	52.37	26.57	43.39	22.01	867.54	72.30
SchLBS18/04	21	F (7-10)	88.54	49.95	42.49	23.97	42.82	24.16	855.64	71.30
Average	139		91.36	49.55	42.29	22.87	40.96	22.23	891.23	61.68
North East										
SchLBS19/049	25	M (11-14)	98.43	51.54	38.40	20.11	50.96	26.68	1093.65	68.40

SchLBS20/04	13	F (7-10)	74.73	41.46	34.40	19.08	34.97	19.40	825.00	68.70
SchLBS21/04	26	M (11-14)	99.41	49.41	44.21	21.97	47.54	23.63	988.57	61.80
SchLBS22/04	26	F (11-14)	95.61	49.06	36.26	18.61	44.88	23.03	1117.17	69.80
SchLBS23/04	30	F (7-10)	97.46	52.47	49.35	26.57	43.47	23.40	953.74	79.50
SchLBS24/04	27	F (11-14)	89.75	51.26	44.47	25.40	39.68	22.66	930.13	58.10
Average	147		92.57	49.20	41.18	21.96	43.58	23.13	984.71	67.72
North West										
SchLBS25/04	26	M (7-10)	84.97	51.63	39.73	24.14	40.29	24.48	879.47	73.30
SchLBS26/04	27	F (7-10)	93.80	49.12	42.16	22.08	45.83	24.00	1008.93	84.10
SchLBS27/04	25	M(7-10)	112.44	52.10	53.03	24.57	51.32	23.78	1157.82	40.30
SchLBS28/04	31	F (11-14)	92.97	54.58	52.04	30.55	35.06	20.58	801.25	50.10
Average	109		96.05	51.86	46.74	25.34	43.13	23.21	961.87	61.95
Total average			103.83	57.15	47.07	25.63	48.26	26.55	1068.73	73.15

Appendix 20: 10 top foods contributing to energy, fat, sugar, sodium

Energy		Fat		Sugar		Sodium	
Food	Score*	Food	Score*	Food	Score*	Food	Score*
White bread or rolls	109	Potato crisps	100	Fruit drinks/squash	98	White bread/roll	110
Potato crisps	69	Butter	89	Fruits	87	Potato crisps	93
Butter	66	Margarine	69	Confectionery bars	73	Proc. Meat – Ham etc	92
Fruit drinks/squash	46	Cheddar /cheese strings	62	Yoghurts	63	Cheddar /cheese strings	52
Margarine	31	Confectionery bars	51	Pure fruit juice	43	Butter	41
Confectionery bars	25	Sausage rolls	46	Chocolate biscuits	35	Chicken/turkey slices	39
Chocolate biscuits	24	Mayonnaise	27	White bread/rolls	35	Sausage rolls	38
Chocolate, cake, other	21	Chocolate, cake, other	27	Plain biscuits/cakes	33	Wholemeal bread/roll	27
Sausage rolls	18	White Bread	27	Chocolate cake, other	32	Margarine	25
Cheddar /cheese strings	18	Choc biscuits	26	Milk/plain choc bars	21	Tuna in brine	17

Notes:

School sampling - A sample of schools was selected using school with the highest and lowest value for % EAR for energy, % RNI for sodium, and % energy from protein, fat, SFA, CHO, sugars and starch. These schools were looked at for their representation of regions, % of free school meals and ethnicity. 11 schools were selected on this basis representing 64% urban, 27% rural, 9% inner city, range of % free school meals from 7%-50%; ethnicity 0-35% and all regions except SW.

Scores listed beside foods are based on the rank they had in each school for that nutrient. So are a ranking score rather than their percentage contribution.

Butter or margarine will be guesstimates, as most children will have said butter but it may not be, also there was little information about amounts of these so standard portion sizes were used.

Mayonnaise – amounts may be higher/lower than actually used as amounts were rarely specified and difficult to know amounts so again standard portion sizes were used.

Sugar – since for many foods, sugar is often not included in the nutrition information so a lot of data is missing for many of the prepack particularly confectionery type foods. So fruits could be higher up the list of foods contributing to sugar intake due to lack of information for other foods. Also data is not available for intrinsic, extrinsic and non-milk extrinsic sugars.

Tuna – all tuna was entered as tuna in brine

Appendix 21: Favourite and Least Favourite foods

Favourite	Number	% pupils	Least Favourite	Number	% Pupils
yoghurt	103	15	yoghurt	44	6
yoghurt drink	6	1	yoghurt drink		0
milkshake	0	0	milkshake	1	0
mousse	1	0	custard		0
cheese snack	40	6	cheese snack	20	3
quiche	2	0	egg	3	0
Total	152	22	Total	68	10
fruit	57	8	fruit	30	4
apple	59	9	apple	27	4
banana	26	4	banana	50	7
orange	16	2	orange	22	3
pear	6	1	pear	8	1
peach	2	0	plum	4	1
strawberry	19	3	Peach	1	0
melon	7	1	melon	1	0
cherry	1	0	Total	143	22
pineapple	4	1			
kiwi	2	0	carrots	1	0
fruit salad		0	salad	8	1
plum	1	0	tomatoes	6	1
mango		0	misc veg	7	1
grapes	22	3		22	3
raspberry	3	0			
olives	1	0	Pancakes	1	0
raisins	6	1	Pasta	3	0
Grapefruit		0	Cereal	2	0
fruit juice	20	3			0
Total	232	34	sausage roll	12	2
			pepperami	3	0
carrots	5	1	Burgers	1	0
salad	10	1			
sweetcorn	2	0	Sandwiches	138	21
cucumber	8	1			
tomatoes	5	1	Fruit winder	2	0
misc veg	7	1	sweets	3	0
Total	37	5	chocolate	53	8
			chocolate biscuits	33	5
Pizza	6	1	biscuits	1	0
Pancakes		0	cakes	32	5
Pasta	11	2	crisps	65	9
Bread	23	3	chips	1	0
Cereal		0	fizzy drinks	4	1

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			Ice cream	1	0
Meat/fish	38	6			
sausage roll	15	2			
Pepperami	7	1			
Chilli	1	0			
Burgers	2	0			
tuna	8	1			
Sandwiches	202	30			
Fruit winder	1	0			
sweets	23	3			
chocolate	174	26			
chocolate biscuits	48	7			
biscuits	60	9			
cakes	99	15			
crisps	232	35			
chips	4	1			
fizzy drinks	11	2			
McDonalds	1	0			
Ice cream	2	0			
donut	6	1			

Dream lunchbox Foods and those to be Banished

Want in lunchbox			Banish from lunchbox		
yoghurt	26	4	yoghurt	29	4
yoghurt drink	15	2	yoghurt drink		0
milkshake	5	1	milkshake	2	0
mousse	3	0	custard	1	0
cheese snack	59	9	cheese snack	26	4
egg	1	0	egg	3	0
Total	109	16	Total	61	9
fruit	25	4	fruit	54	8
apple	48	7	apple	19	3
banana	21	3	banana	36	5
orange	17	2	orange	12	2
pear	5	1	pear	6	1
peach	6	1	plum	1	0
strawberry	35	5	grapes	7	1
melon	5	1	Grapefruit	1	0
cherry	1	0	Total	136	20
pineapple	5	1			
kiwi	1	0	carrots	2	0
fruit salad	11	2	salad	10	1
plum	1	0	tomatoes	9	1
mango	6	1	misc veg	15	2
grapes	24	3	Total	36	5
raspberry	1	0			
olives	1	0	Pizza	4	1
raisins	1	0	Pancakes	1	0
Grapefruit	1	0	Pasta	1	0
Total	215	31	white bread	1	0
			Cereal	2	0
carrots	4	1			
salad	17	2	tuna	3	0
sweetcorn	3	0	sausage roll	3	0
cucumber	2	0	Chilli	1	0
misc veg	7	1	Burgers	1	0
Total	33	5	meat	4	1
			fish	4	1
Pizza	27	4			
Pancakes	2	0	Sandwiches	92	13
Pasta	16	2			
Ciabatta bread	2	0	Fruit winder	6	1
Cereal	11	2	sweets	46	7
			chocolate	93	14
Chicken curry	1	0	chocolate biscuits	17	2
Sausages	4	1	biscuits	26	4
Sunday lunch	8	1	cakes	27	4

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Chilli	1	0	crisps	80	12
Burgers	4	1	chips	1	0
Hotdog	9	1	meat pies	1	0
Chicken	4	1	fizzy drinks	20	3
Fish fingers	1	0	McDonalds	0	0
			Chinese Takeaway	1	0
Sandwiches	82	12	Ice cream	1	0
			donut	3	0
Fruit winder	7	1			
sweets	69	10			
chocolate	132	19			
chocolate biscuits	38	6			
biscuits	9	1			
cakes	36	5			
crisps	80	12			
chips	40	6			
meat pies	4	1			
fizzy drinks	18	3			
McDonalds	17	2			
Chinese Takeaway	7	1			
Ice cream	32	5			