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# Nutrition in Nursery Schools

## East Midlands Regional Report

### February 2010



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## **Background**

The East Midlands Nutrition in Nursery Schools survey was jointly commissioned by Trading Standards East Midlands and the Department of Health East Midlands in June 2009 as part of LACORS (Local Authorities Coordinators of Regulatory Services) national coordinated survey of nutritional standards in nursery schools. The aim of the survey was to collect data to determine an overview of the nutritional content of food served to the under fives in nursery schools.

Children attending nursery often consume a large proportion of their food there, with some attending from 7am- 6pm. It is therefore important that the food offered by nurseries provides children with the correct amount of energy and a good balance of key nutrients. There are currently no regulations for food served in nurseries as there are in schools and although there are a number of guidance documents they are often very general in their approach or not widely publicised to nurseries.

## **Introduction**

Trading Standards through their work in food standards were seen as a key partner by LACORS for this national programme. All local Trading Standards teams in the East Midlands were invited to take part in the regional survey. Across the East Midlands 22 nurseries were randomly selected at a local level, they were a mixture of state and independently run and participation was voluntary.

The selected nurseries were from a range of geographical and socioeconomic areas. Children attending the nurseries do so for varying periods of time and numbers of days each week. The food provision was usually prepared at the nursery but some used kitchens in other buildings on site, for example university campus nurseries or those linked to a primary school. A variety of food suppliers were used ranging from local butchers and supermarkets to national suppliers.

Each nursery provided their daily food provision for one week (excluding breakfast) along with related recipes, portion sizes and ingredient details. Samples for all food and drink available were taken each day over the week. The samples were portioned as served to a three year old child and each component at every meal and snack time was weighed before being correctly stored to be sent to the laboratory for nutritional analysis.

All nursery menus were analysed per day for energy (kcal), fat (g), saturated fat (g), carbohydrate (g), sucrose (g), protein (g), fibre (g) and sodium/salt (g). Seven menus were analysed for calcium (mg), iron (mg) and zinc (mg)<sup>1</sup>. These results were averaged over the week to provide a nutritional breakdown to measure against Caroline Walker Trust's recommendations for 1-4 year olds<sup>2</sup>.

The nurseries who took part in the survey varied in the provision they offered over the course of a day. All nurseries provided a mid morning snack and lunch with the majority

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<sup>1</sup> The range of nutrients analysed was determined by local Trading Standards teams.

<sup>2</sup> Dr Helen Crawley (2006) *Eating Well for Under-5s in Child Care* (2<sup>nd</sup> Edition), Caroline Walker Trust.

providing mid afternoon snack and tea. However some nurseries provided either a snack or tea in the afternoon.

The nutritional targets for these nurseries were adjusted accordingly to include only the requirements for the meals and snacks that were provided. However, the Caroline Walker Trust Guidelines recommend that over the course of a full day at nursery both an afternoon snack and tea is required.

Nurseries were asked at their feedback meeting why both a snack and tea were not provided and it was usually a result of consultation with parents about the food that was provided at home. Nurseries however agreed that when children were still in nursery at 5pm there was a need to provide both a snack and tea and felt they could adapt menus to accommodate this change.

This report provides an overview of the regional survey results. Nutrition in Nursery Schools Guidance has been produced for all nurseries in the East Midlands as a result of this survey to help support the ongoing development of nursery food in the region. The results from the survey and feedback from those nurseries who have taken part all contribute to the guidance document.

A report specific to their menu was provided to each nursery and support given at individual feedback meetings to help both positive and gradual changes to be made to their food offer. This report has been split into three sections as were the individual reports; food group balance, recipe content & portion sizes and nutrient content. The key observations and recommendations have then been summarised.

### **Food Group Balance**

To ensure a varied diet, a balance of foods from each of the four main foods groups should be on offer each day.

Fruit and Vegetables- Children over two years should be offered fruit and vegetables with each meal and at some snack times. A variety of fruit and vegetables should be offered each day including 1-2 portions of fruit and 2-3 portions of vegetables.

A good variety of fruit and vegetables were available each day. All nurseries provided fruit and/ or vegetables at lunch and some snack times but almost half did not serve fruit and/ or vegetables each day at tea. In almost 20% of nurseries fruit and/ or vegetables were the only foods available at snack times.

The introduction of additional fruit and vegetables where required was not seen as an issue when discussed with nurseries. It was often found that fruit was available at all meal times already but had not been highlighted as part of the menu.

Bread, rice, potatoes, pasta and other starchy foods- Starchy foods should replace the energy no longer provided by milk. Wholegrain foods should be introduced gradually and smaller appetites should be taken into consideration as foods from this group contain fibre and can be more filling.

The main starchy foods on offer at lunch were potatoes and pasta with some nurseries providing rice. In 91% of the nurseries surveyed bread or foods such as crumpets and crackers were provided on four or more days for tea; in 41% it was every day. In addition bread and foods such as breadsticks were also served at snack times in 15 of the 22 nurseries but not necessarily as a daily option. Some wholegrain varieties of items such as bread or pasta and rice were on offer in most nurseries.

Nursery feedback indicated that bread was an easy option at tea as the cook was not on site at that time and tea was either prepared earlier in the day or by other nursery staff who were unable to take too much time away from the children. Most nurseries felt they would be able to incorporate suggestions such as jacket potatoes and pasta dishes into their tea menu to reduce the reliance on bread.

Meat, fish, eggs, beans & other non- dairy sources of protein- Protein is essential for growth and development but the diet of children in Britain provides more than adequate amounts as long as they have a varied diet. However iron deficiency in children under five is frequently reported and this food group provides good sources of iron.

There was a good variety of food from this group available. Most nurseries provided chicken and fish each week at lunch time however a third of nurseries did not provide red meat, these nurseries often included beans and pulses in the dishes they provided as a substitute. Oily fish was available in 8 of the 22 nurseries surveyed.

The feedback meetings indicated that some of the nurseries did provide red meat but this was on a different week of the menu cycle to the one used in the survey, however, they were able to adapt the menu to ensure a more consistent provision. Where red meat was not served it was felt in most cases that this could be a question raised with parents to determine if there was any reason to continue to exclude it from their menu.

Oily fish was seen as a difficult food to encourage children to eat especially as some nurseries struggled with white fish. However, suggestions of dishes that proved popular in other nurseries such as gradually introducing salmon to a white fish pie or pasta dishes and sardines/ pilchards on toast were taken on board.

Dairy foods and milk- Although milk intake decreases as children get older it is still important that they have a wide variety of foods from this group. 2-3 portions from this group are recommended each day.

A number of dairy foods were available including milk to drink, yoghurts, cheese, milk based desserts and sauces. The amount of dairy foods available in around a fifth of nurseries was high; this was usually a result of too much milk or cheese being available. Milk to drink was provided on two or more occasions each day in 9 out of the 22 nurseries and 5 provided cheese on four or more days throughout the week.

Feedback showed that those nurseries serving milk more than twice each day weren't aware that too much milk could prevent other foods from being eaten and lead to an unbalanced diet, and in addition how much the milk was contributing to the overall energy content. The

removal of milk at meal times was seen as acceptable in these cases and those nurseries using too much cheese were able to easily adapt menus to reduce this level.

In addition to the four main food groups food and drinks high in fat and/ or sugar, fluids and salt also have an important role to play.

Food and drinks high in fat and/or sugar- There are a number of important foods in this group for the under fives such as butter, spreads and cooking oils as well as some fruit and milk based desserts.

The majority of nurseries provided a good range of fruit and milk based desserts. However, there were some nurseries (approximately 20%) where there were a number of desserts throughout the week that were not fruit or milk based such as biscuits and cakes. In addition some nurseries relied too heavily on fruit at meal times; in these cases additional milk/fruit based desserts, such as fruit crumble and custard, were often recommended to boost low energy levels.

Processed meat products such as ham and sausages were served in most nurseries. Items such as fish cakes, fish fingers, hot dogs and chicken nuggets were also available but these were in the minority of nurseries and in most cases no more than once each week.

The changes recommended were minimal for most nurseries and they felt they could easily adapt however there were a number of nurseries where a lack of desserts other than fruit or the inclusion of processed foods was through parental request. All nurseries felt that further guidance and/ or regulations would help support changes to menus in areas such as this.

Fluids- Water and milk can be served at anytime. Fruit juice that has been diluted should only be served with meals.

Water and milk were the only drinks used throughout the day in most nurseries. Diluted fruit juice was sometimes on offer, however 27% provided squash on one or more days during the week.

Feedback showed that there was no issue replacing squash with diluted fruit juice or water. Almost all nurseries provided full fat milk to their over two year olds and were not aware that semi skimmed milk could be introduced from this age if they were good eaters and had a varied diet<sup>3</sup>.

Salt- Sodium is essential to help balance body fluids but too much can be potentially dangerous for young children. The main source of sodium in the diet is salt (sodium chloride). Children should not eat foods high in sodium too often. 1g sodium = approximately 2.5g salt.

The main food contributing to the salt content was bread and foods such as crackers, breadsticks, crumpets etc. These items were relied on too heavily in the majority of nurseries

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<sup>3</sup> Department of Health (1994) *Weaning and the Weaning Diet*: Report of the Working Group on the Weaning Diet of the Committee on Medical Aspects of Food Policy (Report on Health & Social Subjects), Stationary Office Books.

surveyed. Meat products which were high in salt were used in most nurseries and their use could be reduced in all cases. Other foods available such as beans and spaghetti in tomato sauce, tuna in brine, marmite, gravy granules, stock and ready to use sauces were also recommended to be limited in use and lower salt alternatives to be used where possible. Salt was added during the cooking process in around 10% of the nurseries.

All nurseries used one or more of these high salt foods and discussions at the feedback meetings led to number of ways to adapt their menus to provide a reduction in salt. They were able to make simple changes such as using corn flour to thicken sauces rather than gravy granules or changing tuna in brine to oil or water very easily. Nurseries were often unaware that bread contained salt and therefore the impact it would have on the overall salt content.

### **Recipe Content and Portion Size**

It is essential to serve an appropriate portion size to ensure that children have an adequate energy intake and the correct balance of nutrients. The guidance for portion sizes for this age group is limited and therefore experience of primary school menu analysis was used alongside the nutritional analysis for each menu to highlight any extreme portions to the nurseries.

Main Courses- The main course portion sizes served in 13 of the 22 nurseries were generally too big. Where nurseries were connected to a primary school, the same portion size was often used. Some portions were found to be more appropriate for an adult. Only one nursery was required to increase their portions.

A number of dishes incorporated vegetables and some also included beans and pulses. Bread was occasionally served as an unnecessary accompaniment to main courses. Larger portions should be given to those with bigger appetites where appropriate before additional bread is offered. There were many recipes using stock and gravy granules, all nurseries were recommended to review this to reduce the amount where possible and removing from those dishes where it was not necessary.

The feedback meetings highlighted that on some occasions the sampled portions had been generous to achieve a more positive result. In addition to large portions many nurseries allowed children to have a second helping. Nurseries took the guidance on board and where required the portions were to be reviewed.

Fruit and Vegetables- Around a fifth of nurseries served large fruit and vegetable portions with 73% providing fruit portions that were too big, often being served as a whole piece. Many portions were more than the recommended 80g adult portion.

A number of nurseries allowed free access to fruit at snack times and this was often the reason that the portions were on the large side. Nurseries were not aware of the need to serve appropriate amounts they felt they were complying with the five a day message by serving large amounts of fruit and vegetables; providing free access was a result of the Ofsted requirement to allow choice.

All nurseries were prepared to reduce portions where required and monitor snack times more closely so that excessive amounts are not eaten. Nurseries should not be discouraged from offering a wide range of fruit and vegetables but should monitor that consumption does not become excessive and lead to a reduction in the variety of other foods eaten.

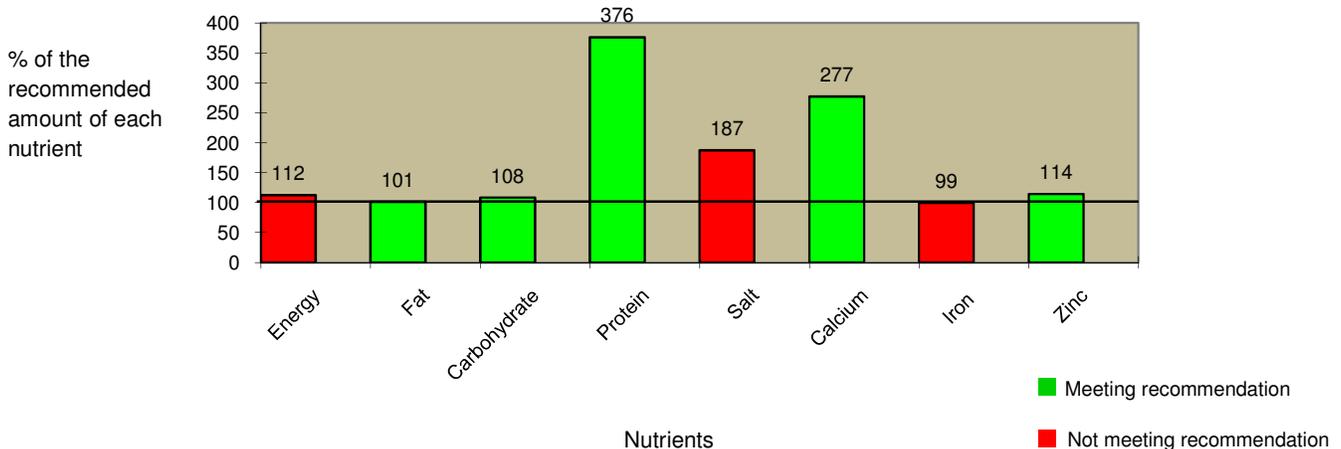
Starchy Foods (bread, potatoes, pasta etc.)- Half of the nurseries would benefit from smaller portions of starchy foods. In most cases this was in line with a reduction in the main course. However, there were 18% of nurseries who required some increases in portion sizes of starchy foods.

Desserts- In general dessert portions were an appropriate size, 4 of the 22 nurseries were required to reduce more than two of their dessert portions.

Drinks- The milk portions varied in size but were generally a good size around 100-150ml. Three nurseries provided 200ml portions or more, which was recommended to be reduced, especially if milk was served more than once each day.

### Nutrient Content

Graph showing an average of the key nutrient values measured against Caroline Walker Trust recommendations for 1-4 year olds



Note- Energy levels, fat and carbohydrate should be at 100%; salt below 100% and protein, calcium, iron and zinc above 100%

The graph shows an average percentage of each nutrient for the 22 nurseries surveyed (calcium, iron and zinc were measured in only 7 nurseries).

Over half of the menus sampled were above the recommended energy content. 10 of the 22 menus sampled were more than 10% above this target and 5 of those were more than 30% above. Only 14% of the menus sampled met the recommended energy content, however, 31% provided a good balance of energy from fat, carbohydrate and protein.

The fat content was acceptable in around 60% of the menus sampled but approximately a third were more than 10% above this target with 3 nurseries being more than 30% above. In general a change to semi skimmed milk where appropriate alongside the required portion size changes would provide the necessary decreases.

Carbohydrate levels were achieved in 14 of the 22 menus sampled with 7 achieving less than 90% of the target, 3 of these menus were below 70%. Where appropriate amounts of starchy foods were already available an increase in the number of milk and fruit based desserts would provide a boost to carbohydrate levels. Where reductions in portions were recommended the nursery had more than adequate levels of carbohydrate.

All nurseries exceeded the minimum target for protein; therefore any recommended reductions to portion sizes to achieve other nutrient requirements would not reduce protein levels below this target.

The main area of concern was the salt content as all nurseries were more than 20% above the maximum target. Of the 22 menus sampled 16 (73%) were more than 50% above this target with more than half of these (9 nurseries) achieving more than double the recommendation. Where the energy content was too high the recommended reduction was not enough to achieve the salt target therefore additional changes to all menus and recipes were required.

The high amount of bread and foods such as crackers, breadsticks and crumpets on the majority of menus was contributing to the high salt levels. The use of these foods was recommended to be reduced, especially at tea where for many nurseries bread was used daily. Nurseries were advised to keep all high salt foods to a minimum and to not add salt during the cooking process as the under fives have a very low salt requirement and dishes should not be made to adult tastes.

Calcium content was easily achieved in all nurseries where it was measured. It is likely that due to the use of milk as a drink and the availability of milk based desserts, the majority of the nurseries surveyed would have achieved this requirement.

Iron and zinc targets were achieved by around half of the seven nurseries who were sampled. The menus where red meat was used at least twice and/or a good range of beans and pulses were incorporated provided good levels of both iron and zinc. In addition wholegrain foods were recommended to be further introduced where possible.

Saturated fat, sucrose and fibre were also looked at but these nutrients do not have specific recommendations to measure against.

Saturated fat ranged between 9% and 16% of the energy content, the recommendation for the over fives is a maximum of 11% of energy to be from saturated fat, however, it is acceptable to be above this figure for under fives as around a third of their saturated fat comes from milk. The recommended change to portion sizes and the introduction of semi skimmed milk where appropriate will lower this figure and changes to desserts will provide an increase ensuring an overall balance is maintained.

The fibre content was above the 18g/ day recommended for adults in half of the nurseries sampled; however, reductions to portion sizes, especially fruit, should ensure a more appropriate amount is available.

Sucrose was below 1% of the total energy content in most menus sampled, however, there are other non milk extrinsic sugars (NME sugars)\* found in food and drinks that were not measured in this survey. The desserts will contribute the most to the NME sugars content but in general they were of an appropriate size and fruit or milk based, suggesting that the maximum target would not be exceeded in these nurseries. However, there were some nurseries where biscuits and cakes were available more than once in a day that were not fruit and/ or milk based. This was recommended to be reduced as NME sugars are likely to be too high in these nurseries.

\* These are the sugars that are not part of the cellular structure of food; this includes sugar added to food as well as sugar in fruit juices and other drinks. Many processed foods contain these sugars.

## Summary

The key findings were as follows-

1. 73% of nurseries provided fruit portions that were too big.
2. Almost half of nurseries did not provide fruit or vegetables each day at tea time.
3. 91% of nurseries provided bread or foods such as crackers, crumpets etc on four or more days at tea time.
4. A third of nurseries did not provide red meat in the week sampled.
5. 8 of the 22 nurseries sampled provided oily fish.
6. Almost all nurseries used full fat milk and were not aware that semi skimmed milk could be introduced to the over two's if they were good eaters and had a varied diet.
7. 27% provided squash on one or more days in the week sampled.
8. All nurseries provided 20% more salt than recommended levels, for 40% it was more than double.

The nurseries sampled all showed a positive attitude towards providing a well balanced food offer for their children. They welcomed any guidance and recommendations given and all were prepared to make changes to improve their menus.

Below is a summary of the recommendations provided as a result of this survey.

1. Full day care should provide breakfast, lunch, tea and two snacks at regular intervals throughout each day.
2. Fruit and vegetables to be offered at all mealtimes and some snacks.
3. Increased variety of starchy foods, especially at tea time, to reduce the amount of bread available.
4. Reduced use of high salt meat products; ensure stocks, gravy, ready to use sauces and other foods high in salt are kept to a minimum and alternatives used where possible.
5. Oily fish to be incorporated into the menu cycle.
6. Whole grains, beans and pulses to be incorporated into dishes where possible and provide red meat each week.
7. Appropriate portions sizes should be provided and intake is monitored when a free choice is offered.
8. Milk, water and diluted fruit juice should be the only drinks available.

The information in this report is based on figures from the public analysts and feedback provided by the nurseries. The recommendations are given as guidance to help nurseries enhance their food offer. Any changes made to nursery menus should be gradual to ensure minimal impact to the children.

It is recommended that any major changes are in consultation with nursery staff, parents and children. In addition it is advised that further nutritional analysis should take place if changes are made. The Nutrition in Nursery Schools East Midlands regional guidance provides more detailed information to support nursery food provision.

## Supporting Documentation

The following websites, reports and guidance documents were used as reference points throughout this survey and will provide further information-

East Sussex Trading Standards (2009) *Nippers' Nutrition Report*, East Sussex County Council.

Dr Helen Crawley (2006) *Eating Well for Under-5s in Child Care* (2<sup>nd</sup> edition), Caroline Walker Trust.

Scottish Executive (2006) *Nutritional Guidance for Early Years: Food Choices for Children Aged 1-5 Years in Early Education and Childcare Settings*. Scottish Executive.

Department of Health (1994) *Weaning and the Weaning Diet: Report of the Working Group on the Weaning Diet of the Committee on Medical Aspects of Food Policy (Report on Health & Social Subjects)*, Stationary Office Books.

Soil Association & Organix (2008) *Georgie Porgie Pudding and Pie: Exposing the truth about nursery food*. Soil Association.

[www.cwt.org.uk](http://www.cwt.org.uk)

[www.schoolfoodtrust.org.uk](http://www.schoolfoodtrust.org.uk)

[www.nurseryfood.org.uk](http://www.nurseryfood.org.uk)

[www.food.gov.uk](http://www.food.gov.uk)

[www.actionsalt.org.uk](http://www.actionsalt.org.uk)

[www.nhs.uk/change4life](http://www.nhs.uk/change4life)

[www.5aday.nhs.uk](http://www.5aday.nhs.uk)

[www.henry.org.uk](http://www.henry.org.uk)

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Report written by Gina Gorvett, Nutritionist [www.ggnutrition.com](http://www.ggnutrition.com)

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