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Starting early: food and nutrition education of young children

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**FOOD
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Introduction

1. Research into the health and wellbeing of schoolchildren has shown that there are significant concerns about their current and future health, in particular the increase in obesity and related conditions. There is evidence that the impaired childhood growth and development that result from poor nutrition are linked to chronic disease in adulthood. In addition, poorly nourished children, particularly those who are overweight or obese, often experience significant social and psychological problems.^{1, 2}
2. Eating habits are developed from a young age and messages about healthy lifestyles need to be delivered in a clear and consistent manner if children are to develop the knowledge, understanding and skills they need to make appropriate food choices and develop positive attitudes to diet and health. Early years settings, such as playgroups and nurseries, and primary schools have important contributions to make in this regard, alongside parents and carers.
3. In the autumn term 2003 and the spring term 2004, childcare inspectors and Her Majesty's Inspectors from Ofsted, accompanied by nutritionists commissioned by the Food Standards Agency, visited 25 settings, including 19 nursery, infant and primary schools, and 6 maintained and private day nurseries. The inspection focused on:
 - evaluating the appropriateness and quality of the work with food that the children undertake
 - assessing the extent to which the environment in which the children work and eat is supportive of promoting good health and nutrition
 - identifying the factors that support or impede food and nutrition education.

Main findings

4. Examples of effective practice were seen in all of the early years settings but in only a minority of the schools.
5. The most effective practice was driven by the aim to educate children to make informed and independent food choices. In it:
 - there was an unambiguous, clear and coherent policy that:
 - steered the management of food and nutrition education
 - was based on an audit of current practice
 - articulated clearly what was to be achieved, why, by what means and over what timescale
 - specified how success in doing so would be measured
 - the knowledge of those engaged in teaching nutrition and developing children's understanding about food and health was accurate, based on informed and current nutritional advice, and free from bias
 - the messages that were conveyed about food and nutrition were coherent and consistent, whether in the formal curriculum or in routine practice, for example in the food that was served to children, in the social and working environment that was established, or in the actions of others such as teachers, lunchtime supervisors and caterers
 - the children were active participants in their learning and had good opportunities to put into practice what they had learned
 - settings recognised the importance of involving parents/carers in their strategies to promote healthy eating and were increasingly making efforts to do so.
6. There were a number of key factors that impeded effective food and nutrition education in a significant proportion of the settings visited. In particular:
 - in the schools, there was rarely a coherent programme of food and nutrition education that built children's knowledge and understanding of healthy eating in a planned and systematic way. As a result, children's knowledge of food and nutrition was generally poor and what they learned had very little impact on what they chose to eat and drink, even when they had the opportunity to select from a range of options
 - teachers and others involved in food and nutrition education lacked sufficient accurate and up-to-date nutrition knowledge,

and the confidence and competence they needed to teach children effectively how to prepare and cook food

- the meals provided in most of the schools did not complement sufficiently the healthy eating messages that the teaching sought to convey.

Achieving an effective food policy

7. The establishment of a food policy was seen as a crucial first step to ensuring a common approach, since it sets out and guides everything that relates to food and nutrition education in an organisation, whether it is a playgroup, nursery or school. It enabled everyone, whether children, staff, governors, parents/carers, helpers or caterers, to have a shared understanding. In the minority of settings that had effective food policies, account was taken of the fact that education begins in the home and that by the age of three, at the start of the foundation stage of education, children have already learned a great deal about food. By the age of five, when they enter Key Stage 1, their knowledge of food is quite extensive, overlaid with their personal likes, dislikes, preferences, customs and opinions. Therefore, effective policies took good account of these factors and built on what children already knew, understood and could do.
8. The most effective food policies:
 - set out clearly the philosophy that underpinned food and nutrition education within the school or other setting
 - focused, through their key aims, on improving children's health and well-being
 - were allied with development or improvement plans in the school or early years setting and were formal components of the strategy for moving forward
 - specified the key food and nutrition messages that were to be promoted
 - identified ways to ensure that the approach to food and nutrition education was co-ordinated and that everyone, including parents/carers, understood how to contribute effectively
 - made provision for training so that all staff were able to understand the principles underpinning the key messages and acquire the necessary knowledge and skills to convey them accurately and consistently
 - established clearly the mechanisms for monitoring and reviewing the impact of the policies.
9. However, it was recognised that the policy grows from the particular perspective of a school or setting, taking account of the views of all concerned, as well as an audit of the current situation. Where effective policies had been established, schools and settings had generally gone through a number of steps, asking themselves a series of questions at each stage, such as those in annex A. Others had devised their policies through their involvement in the National Healthy School Standard (www.wiredforhealth.gov.uk).

One of the **primary schools** devised a food policy as part of its drive to achieve the National Healthy School Standard. Through a process of discussion with the children, their parents/carers, teachers and support staff, the approach to food and nutrition in the school was clarified and ways of putting the strategy into action were specified.

For example, the underpinning philosophy was that:

- eating should be promoted as an enjoyable activity, as well as one that contributes to good health
- the school's role should be to develop children's ability to make informed food choices
- the eating habits of individuals and families should be acknowledged and respected.

The aims were to:

- encourage pupils to develop positive attitudes towards eating, both through the formal curriculum and all the other learning opportunities that occur during the school day
- provide experiences to develop the children's enjoyment of food as well as their ability to make informed choices
- promote an understanding of a balanced diet in which some foods play a greater role than others
- develop pupils' understanding of the importance of the social contexts in which eating takes place
- provide guidance so that the messages about food and nutrition are consistent across all the school's activities, including snacks eaten during the day, the school meal, packed lunches, rewards and the food taken on school trips.

Through the policy, all aspects of the school's life and work were considered and a number of changes were made. These included:

- checking the work undertaken to address the early learning goals in the foundation stage, and the science and design and technology programmes taught in Key Stages 1 and 2, to ensure that the content was accurate, that the teaching accorded with the aims of the school's food policy and that the information was consistent across all aspects of the work
- agreeing that fruit or plain biscuits should be the preferred snacks at morning break, rather than crisps, sweets or

chocolate-coated products

- *sharing with parents/carers accurate and up-to-date nutritional guidance gained from the Food Standards Agency's website (www.food.gov.uk) to help them plan healthy packed lunches for their children*
- *providing water for the children to drink freely throughout the day.*

*The children in one **special school** for primary-age pupils have a variety of special educational needs, including severe and complex learning difficulties, profound and multiple learning difficulties, sensory impairment, communication problems and specific medical needs. To address the needs of its pupils the school does a lot of work to encourage sensory stimulation. Its policy, therefore, includes a focus on:*

- *including the children in mealtime experiences*
- *improving the quality of the children's lives and having some fun along the way*
- *bringing pleasure to the children by providing different tastes*
- *helping the children to learn to and maintain their ability to chew and swallow*
- *providing satisfaction from the meal through the smell and taste of food, mouth movement, increasing the flow of saliva, swallowing and feeling full.*

10. Such schools and early years settings recognised the importance of keeping people informed about the changes introduced by the policy and the progress being made. They used a variety of ways to do this.

*Food and nutrition education is seen as a key element of the development plan of one **nursery and infant school**. It is working towards achieving the National Healthy School Standard and recognises the importance of keeping parents/carers informed of the progress being made to help them understand what the school is trying to achieve. Therefore, it includes comments on this work in its monthly newsletter to parents/carers. For example:*

'You are aware that healthy eating is being given a high profile in the school. As part of our everyday routine, children are eating fruit and drinking water. Year 1 and Year 2 children have just completed a unit of work focusing on the importance of eating particular foods as part of a healthy and balanced diet. We realise that it can be difficult to persuade children to eat healthily, so we will be giving lots of praise and stickers to children who choose to eat fruit and vegetables as part of their school meal and packed lunch. Now might be a good time to give that bit of encouragement

to persuade your child to eat the recommended five portions of fruit and vegetables a day!

Putting the policy into practice

11. Settings varied considerably in the effectiveness with which they implemented their food policies. They used a number of appropriate contexts to promote their aims, objectives and the main healthy eating messages, and to use food and nutrition education to enhance the quality of the learning. These included informal contexts as well as the formal curriculum. However, a number of factors impeded settings from making good progress in providing effective nutrition education.

Curriculum

12. It is expected that the early years curriculum should be planned carefully so that most of the children are helped to achieve the early learning goals by the end of the foundation stage, with all making good progress towards doing so and some, where appropriate, going beyond them. In planning the curriculum, choosing the content and selecting ways to teach it, the more successful schools were able to use food and nutrition education as a useful vehicle to enable children to:

- have a wide range of first-hand experiences, with appropriate interventions by the staff to extend and develop the learning that is taking place
- take part in activities that build on and extend their interests, capabilities and experiences
- have opportunities to be imaginative and creative
- learn to interact and communicate with others
- become increasingly confident and develop a sense of wellbeing and achievement
- show initiative and become increasingly independent and responsible for themselves and their actions
- develop their physical skills.

13. In general, the curriculum in schools is planned and organised in separate subjects in both Key Stages 1 and 2. However, teachers also plan across subjects, making links, for example, with literacy and numeracy. The Primary National Strategy enables schools to build on this approach to provide a varied and exciting curriculum that develops pupils' skills, knowledge and understanding in a range of ways. This integrated approach avoids the development of a curriculum where the learning outcomes are unconnected, and the pupils are not able to gain a sufficiently clear and coherent understanding of food and nutrition that they can use in their daily lives.

14. Of the early years settings and schools visited, the minority that were the most successful in developing and embedding children's understanding of food and

nutrition were those where the senior managers had a clear strategy for fitting it into the curriculum. In these settings, systematic and coherent learning opportunities were linked to the early learning goals and six areas of learning in the foundation stage, and the National Curriculum programmes of study in Key Stages 1 and 2. Their aim was to educate the children to choose a balanced, healthy diet, both within and beyond the school environment, based on accurate and consistent messages.

*The Year 5 pupils in one **primary school** were looking at some aspects of daily life during the Second World War. This lesson was the first of a number focusing on food rationing. The teacher had asked the pupils to keep a diary of what they had eaten the day before and they started the lesson by discussing it with other members of the class, first in pairs and then with increasingly large groups of other pupils in order to reach a composite list of the foods that had been consumed by most.*

She then showed the pupils a ration book and explained the concept of rationing, drawing on the contents of accounts written by local people describing what it was like to have such a diet. One by one, she took rations from a bag, assembling the foods that the pupils and their families would have had. They then began to consider why these foods in these quantities had been chosen and why they constituted a relatively well-balanced food intake.

The teacher then returned to the list of foods that the pupils had eaten the previous day, systematically removing those that she could show had not been available at that time, predominantly convenience and snack foods. They discussed when and why these foods had been introduced, their cost and the raw materials and manufacturing processes necessary to produce them, comparing them with the food rations. They also looked at the quantities of food that they normally ate, again comparing them with what would have been available during the period of rationing.

Through this work, the pupils began not only to understand the impact of the war on food supply, but also to consider:

- whether their diets were as healthy as those based on food rations*
- the quantities of food they eat and the impact of over-consumption on health*
- the relative costs of fresh and convenience foods and the reasons for the differences.*

*In a **special school**, practical cookery is regularly used as a medium for teaching mathematics. In this lesson, the teacher and pupils first put on their aprons and wash their hands. The teacher uses a display board with pictures of the individual ingredients for carrot muffins (egg, milk, honey, flour, sugar, oil, cinnamon, carrot and vanilla) and numbers, so that the pupils can predict the quantities. The teacher encourages close observation, helps pupils to focus on the task and includes everyone in smelling and tasting the foods, selecting weights, judging when the*

scales are balanced, operating the electricity supply to the hand mixer (by remote switch by a girl with severely limited movement) and putting ten paper cases onto the bun trays (by a boy with autism who shies away from the foods themselves). As she demonstrates how to make the muffins, she targets questions to individual pupils and the support assistants work with individual pupils to enable them to be fully involved:

- 'How many eggs do we need to use today, David? Yes, two eggs.'*
- 'If we need 150g of flour, and I have a 100g weight, can you find me the other weight that I need to make 150g?'*
- 'Watch carefully, and tell me when the scales are balanced; when the weight of flour is equal to 150g, not more and not less.'*

A girl in a special chair goes with her assistant to find out what is on the lunch menu and, using a tape-recorded message, informs the rest of the class what is on offer so that they can think about what they might choose as they work.

15. When the pupils were able to understand the key messages about food and nutrition and experience a broad and integrated curriculum, they were motivated and demonstrated considerable enthusiasm in the way that they approached their work, even when they were challenged by the task that was set.

*In one **primary school**, one group of Year 6 pupils was asked, as part of a numeracy session, to plan a number of healthy, balanced meals on a given budget. Another group had to plan a day's calorie-controlled menu for a group of people, such as teenagers, sedentary office workers and the elderly. The pupils had previously undertaken research to compile a range of data that would help them to complete the task, including nutritional analysis and costing of common foods, finding out the nutritional requirements of different groups within the population and the principles underpinning a healthy diet. They were motivated and worked in both a co-operative and collaborative manner. Their ability to call on their prior learning consolidated their understanding of healthy eating. They became engrossed in their work and came to realise why a balanced diet is related more to intake over time rather than to the intake of nutrients within one specific meal.*

16. However, a significant majority of the settings visited, particularly the schools, encountered a range of difficulties in planning a coherent curriculum. In particular, they were:

- tentative about deciding on the curriculum content and the resources to use
- uncertain how to sequence the work so that the children's knowledge, skills and understanding could be built up and developed systematically and progressively over time

- confused about the appropriate model of healthy eating to steer the work in food and nutrition and associated activities.

17. In most of the schools in particular, the food and nutrition topics that the children studied were planned as isolated units of work. While children enjoyed them, as seen in some of the lessons observed on the inspection, they tended to be less successful in building up children's knowledge systematically. They were also less effective in enabling the children to deal with increasingly complex concepts, for example in moving from understanding the overarching messages about healthy eating to understanding the role and functions of specific nutrients, which is the point that they should reach by the end of Key Stage 2.

18. Very few of the settings had looked at ways of dividing this wide area of study into different aspects and considered how to embed them within a coherent curriculum over time. Few had used readily available resources to help them in this task because they were unaware of the range of materials available to help them do so. For example, they were unacquainted with the cross-government initiative 'Getting to Grips with Grub', which defines the competences that young people of 14–16 need by the time they leave school and which gives a steer on how to begin to develop them from an early age. They were also unaware that some organisations have produced clearly defined and robust lists of competences for pupils in Key Stages 1 and 2 on which schools can build their curriculum effectively (for example www.nutrition.org.uk). However, the early years settings were much more aware of the competences they were seeking to develop, as in the following example:

*In a **nursery**, the staff have decided that it is important for the children to be able to:*

- *name a range of different foods*
- *understand that like foods can be grouped, for example, as fruit or vegetables*
- *appreciate that foods in the same group have different characteristics such as tastes*
- *express their likes and dislikes*
- *begin to understand that different foods come in a variety of different forms.*

The task today is to look at different fruits. A group of 3-year-old children work with their teacher, watching as she dissects four different types of fruit to show their various structures and to highlight particular features, such as what the skin looks like, what colour the flesh is and whether there are pips or seeds. She encourages them to taste the fruit and to give their opinions on whether they like it or not. She comments carefully on what they say, extending their vocabulary in doing so and encouraging them to look for other features in each piece of fruit, such as whether it is juicy or not. She also has a commercial fruit bar, containing 48% fruit, that is made up of the same set of fruits that the children are tasting. She encourages the children

to compare the taste and appearance of the bar with the fresh fruits. The children are thoroughly absorbed, helped by the teacher's considerable expertise in encouraging them to sample the foods and to observe closely. They do this willingly and intently. This is a very powerful session in promoting their understanding and helping them to develop their competences.

19. The schools tended to base the teaching of food and nutrition on different models of healthy eating, such as the food pyramid and the traffic lights system promoted by a number of different publishers in a range of publications for schools. These are designed principally to show how different foods can be grouped and how many portions from each group should be eaten daily for good health. So, for example, in the traffic lights system food is classified into three groups designated as red (those that should be eaten only in small amounts), amber (those that can be eaten in moderate amounts) and green (those that can be eaten freely). However, there are a number of problems with many of these systems, the main ones being that:

- they are not based on British food patterns and dietary advice, so they are not easily linked to the specific health messages that are promoted in this country
- they can be confusing as foods can easily transfer from one group to another depending, for instance, on how they are prepared and cooked. For example, fish can be placed in the green group in the traffic lights system, but it should be reclassified in the red group when it is coated with batter and fried. This is confusing for children.

20. Very few of the schools used The Balance of Good Health, published by the Food Standards Agency, even though it is designed for use in the UK. It divides a dinner plate into five sections and a different food group is assigned to each of the segments:

- fruit and vegetables
- bread, other cereals and potatoes
- meat, fish and alternatives
- milk and dairy foods
- foods containing fat and foods containing sugar.

It is useful as a basis for healthy eating, as shown in the example below, in that it:

- helps children to understand the concept of a balanced diet and the relative proportions of food that they should eat from each food group
- enables children to understand that all foods can have some place in a balanced diet

- helps them to see that a healthy diet relates to food eaten over a period of time rather than in an individual meal.

*Children in the nursery and reception class at a **primary school** were enthralled by the different foods that the school nurse had brought to help illustrate a healthy diet. She showed them foods from each of the groups in *The Balance of Good Health* and let them taste some of the ones with which they were less familiar, particularly the more unusual fruits such as pineapple, mango and kiwi fruit. She asked them to identify the different ways in which some of the foods were prepared and eaten; for example, they compared potatoes that had been boiled with those made into chips, and oranges served as fresh fruit with orange juice. Having looked closely at the different foods in the five groups, she went on to ask them to think of meals that could be made by combining foods from different sections of the 'plate', such as tuna and salad.*

The children found the work very interesting and engaged intently in the tasks that she set. They showed an increasing understanding of how to choose a healthy diet; for example, they could select foods from across the five groups to make up meals for different times of the day, and could explain why foods from different groups should be eaten over a period of time rather than those from one or two groups only.

Breakfast clubs

21. In the early years settings, breakfast and other meals, together with snack times, gave significant opportunities for learning. This was true, too, in the very small number of schools that offered breakfast before classes began in order to meet the needs of the children themselves and the families that formed the school's community. These opportunities gave the children the experience of eating with their peers and helped them to develop a range of social skills. They also provided the school with the opportunity to promote healthy eating through the food that they provided.

*In an urban **primary school**, 52% of the children are eligible for free school meals. It had established a breakfast club two months ago, driven by its desire to ensure that all its pupils had an opportunity to eat breakfast and to prepare them for the day ahead. So far, between 20 and 25 pupils (about 10% of all the pupils) attend the club, which operates for around 45 minutes before the start of school; they pay 50p a day, less if they wish to purchase individual items rather than the full meal.*

The menu is simple and nourishing, and draws on the range of foods that the pupils like. It consists of fruit juice, cereal with milk, and toast and jam. The children sit at tables with their friends in a calm and relaxed manner. Parents/carers are also encouraged to join their children for breakfast, accompanied if they so wish by their other children who are welcomed warmly and encouraged to mix with their older siblings and their friends. Parents/carers welcome this initiative for many reasons, for example it introduces younger children to the school environment and ensures that they, as parents/carers, have time to eat this important meal together in a quiet and organised way. The environment is orderly and peaceful; background classical music is played, the name of the piece and the composer being displayed prominently.

The club is staffed by volunteers, drawn mainly from the school's lunchtime supervisors and members of the parent-teacher association. There is a high level of commitment to the activity, the volunteers seeing it as a way that they can help the school to improve and meet the needs of the community that it serves. They ensure that the food is set out attractively, that there are adequate facilities for making toast so that it is crisp and hot when served, and that waste and dirty crockery are removed quickly to maintain the quality of the environment.

Many of the pupils who attend the club do so because they enjoy the social contact with their peers and the range of games and other activities in which they can engage when breakfast is over. They take part in these activities eagerly, feeling motivated by them and well prepared for their lessons.

Snack times

22. In the settings where there was a food policy, care was taken to ensure the food and drink consumed as snacks during the day met the guidelines set out in the food policy. In the main, this meant that:

- drinking water was freely available, and the agreed procedures gave children and staff ready access to it with minimum disruption. Some had water fountains in the room, for example: in one playgroup, the children learned that they take a clean beaker from the table, fill it from the fountain, sit on the chair by the fountain until they have drunk the water and then put the container into a bucket so that it can be washed hygienically. The children follow this procedure in a mature and capable manner. Older children often had named water bottles that they had either filled at school or at home, and which they kept with them as they worked so that they could drink when they were thirsty
- children were discouraged from bringing fizzy drinks from home, or crisps, sweet biscuits, chocolate-coated biscuits and snack bars, or other products that are high in salt, fat and sugar
- tuck shops sold healthier options, such as fresh and dried fruit, yoghurt and unsalted nuts
- fruit was given a high profile, either by children bringing it from home or the money to buy it, or through the National School Fruit Scheme.

*In one **nursery**, the children prepare and serve fruit to each other daily. They take part in preparing it on a rota basis to ensure that all of them have the opportunity to be involved. The equipment they need is kept on a shelf so that they can choose which pieces they need to prepare the different fruits for that day. The adult who works with them discusses the activity with the children, ensures that they follow good hygienic practice, helps them develop their vocabulary and emphasises the*

reasons why fruit is a healthy food choice.

23. Snack times in all the early years settings were also seen as times when a great deal of valuable social interaction could take place between the children themselves and the adults who care for them. They also provided good opportunities for promoting a valuable range of other skills that children need to develop as they grow.

*In a **pre-school**, snacks are served at 11.00, with a varied range of food being served, such as cheese, breadsticks and fruit, and drinks of milk, water and sugar-free squash.*

Two members of the nursery staff prepare the snacks in the kitchen, taking care to maintain good standards of hygiene, for example by wearing gloves to handle the cheese as they cut it into manageable bite-sized pieces, washing the fruit carefully and wiping the tables where the food is to be served with antibacterial spray. Drinks are prepared in advance and put in separate jugs on each table. The other members of the staff help the children to wash their hands in bowls of soapy water.

The children sit at tables in groups of six with one member of staff at each table. One child at each table is chosen to be a 'monitor' and helps the staff to count out cups for each child. Plates of cheese, grapes and breadsticks are placed in the centre of each table and the children are encouraged to pass them to each other. Jugs of milk and water are passed around the table and the staff encourage and support the children in pouring their own drinks. The children talk readily and easily to staff and each other throughout snack time; they discuss their likes, dislikes and their news, and they learn to share, take turns and co-operate. Snack monitors help the staff clear the tables and are rewarded for helping with thanks from the staff and the other children.

Meal times

24. In the pre-school settings visited, meals were integrated well into the day's programme as significant and important learning experiences, in addition to being necessary to ensure that the children were properly fed. These occasions were used effectively to promote healthy eating messages, both through the menus and the environments in which the food was served and eaten.

*Food plays an important part in the day-to-day routine in one private **day nursery**. The kitchen is centrally positioned in the nursery and, through a hatch, the children and their parents/carers can see the staff preparing the food, ask questions and sample it. This gives children good opportunities to learn about food and creates a relaxed and trusting relationship with the parents/carers.*

The children's meals are served in small family groups where the adults encourage good manners, mutual respect and the development of the physical skills needed to serve food and use the cutlery effectively. At breakfast, the children are provided with individual portions of butter and cheese to help them develop independence. Food is served in dishes that are placed on the table and the children are

encouraged to ask for second portions; they serve themselves additional helpings and offer the same to their peers. As they eat, they are encouraged to share information with each other and hold discussions with their carers, for example, about what they do at home. This is very effective in developing their social skills and good relationships with each other and with adults.

The menus are varied, based on the use of a wide range of good-quality and simple ingredients. Every week, fresh seasonal produce is purchased locally, which gives the cooks the opportunity to have greater control of quality and costs, and enables them to substitute one ingredient for another to make the best use of what is available. This allows the nursery to provide high-quality meals; the children enjoy them and waste very little.

25. A good proportion of the schools tried to ensure that the food served at lunchtime, including that brought from home, promoted healthy eating. They devised a range of strategies to do so that included:

- making sure that the pupils had the opportunity to think about what they would choose to eat that day by displaying the day's school lunch menu in the corridor, classroom, hall or dining room. This was sometimes displayed on a laminated card or on a chalkboard, and pictures were used for very young children or those less able to read well
- ensuring that the height of the food server took account of the fact that the children need to see the food before making their final choice
- devising systems to help the children make informed and healthy food choices
- asking the children for their ideas on what makes the dining room a welcoming and inviting environment, so they could make suggestions about such things as the table coverings and crockery that are used and how to consider their cultural needs better, for example through the provision of chopsticks or allowing them to use their hands. One school had particular success in using the children's views.

*Using the school council as a vehicle for the change, pupils in a **primary school** were involved in helping to make playtime and lunchtime more enjoyable and to provide healthier snacks. A committee was formed with representation from each class, the teachers, other staff in the school and the governors. The children were asked, through a questionnaire, how the school could increase the numbers of children staying at school for lunch. The school council suggested that the children would prefer tablecloths, plates and dishes as they disliked 'flight trays'. Using these meant that they had their pudding on the same tray and at the same time as the main course. As a result, their pudding was cold, could be spoilt by spilt drinks or younger pupils ate it before the main course. Their suggestions were acted upon,*

much to their delight. They also discussed the menu options with the school cook, who changed them to provide healthier choices to encourage the pupils to take school dinners. Changes included introducing a salad bar, sugar-free squash and fruit salad or fresh fruit on the menu every day.

The school council was also involved in deciding which snacks should be sold at playtimes. These were then ordered by the children from a local store using the Internet, under the supervision of learning support staff. This was an effective way of encouraging pupils to take responsibility for choosing healthy snacks, for example lower-fat crisps and biscuits, crackers and cheese, yoghurts, raisins and fruit, in place of the foods higher in fat and sugar that they had been bringing from home. It also raised the children's self-esteem as they realised how the school council could influence decisions to improve healthy eating at the school.

26. However, most of the schools had difficulty in ensuring that the healthy eating messages promulgated in the classroom were carried over into the food choices that the children had made at other times. Evidence from the inspection points clearly to the fact that school meals pose one of the most significant challenges to senior managers who are striving to achieve coherence in the food and nutrition education that takes place in their schools.

27. Nutritional standards for school lunches became compulsory across England in maintained nurseries and the primary and secondary sectors of education in April 2001 (www.dfes.gov.uk/schoollunches). However, in many of the schools surveyed, the nutritional standards were not being implemented effectively, even though the menus devised by the catering companies that provide the school lunches had been designed to meet them. Practices adopted by many of the cooks, often because of misunderstanding and misinterpretation, prevented them from being met: for example a cook might only prepare a small number of servings of a dish that he/she feels the children will not like, such as shepherd's pie, compared with a large amount of a dish that is popular, like fish burgers or hot dogs. Most of the menus stated that items such as fruit, yoghurt, cheese and crackers, salad and jacket potatoes were available every day. In reality, only a very small number of the items were on display and supplies had often run out before the children near the middle or end of the queue had made their choices.

28. Most of the schools went out of their way to offer the children a choice of food. However, what was offered frequently hindered the children's understanding of adult food choice as well as the development of mature eating habits. They were often served foods such as chicken nuggets and deep-fried frozen potato shapes, designed to resemble 'fast food' and thought to be more appealing to children, rather than composite dishes. It was also evident that choice did not always equal good nutritional balance. Children often chose nutritionally unsound meals when they were left to select without any guidance, and younger children frequently found too much choice overwhelming, tending in these situations to choose those foods with which they were most familiar.

*The headteacher of one **primary school** describes how she, her staff and local*

partners worked together to help the children make wise food choices:

'The need to promote healthier food options within the school meals service was essential, and our children needed to be helped to make wiser choices. We set up a working party that included a community dietitian and the school cook and, as a consequence, we were able to work towards a shared vision in how to modify the menus and influence the children's food choice. Messages about healthy eating were placed prominently in the hall and dining room, and a rosy apple logo was placed beside the healthy options on the menu board and in front of the foods at the serving hatch.

'Influencing the packed lunches that the children brought to school was an even greater challenge. Again, a state-registered dietitian from the local primary care trust had a considerable influence on what we decided to do. She helped us devise simple, cheap and nutritious snacks, reflecting the multicultural nature of our school's community, and these were incorporated into a healthier options leaflet for parents/carers. It was launched at a workshop at which the children prepared the snacks.

'Joint working between the school, the community nutrition and dietetic service and the specialist health promotion service not only assisted the work in our school but also led to radical changes in the catering service commissioned by the local education authority. The state-registered dietitian undertook an analysis of the school meals in all the primary schools in the authority and, based on the outcomes, led training for all of the school meals supervisors.'

*One **primary school** tried to devise small yet effective rewards to encourage their children to eat more healthily. The staff introduced a special dinner award scheme to reward pupils who chose to eat healthy foods, behave well and are helpful during lunchtimes. The scheme also includes children who have a packed lunch. Four children are nominated each week and the winner is allowed to bring a guest to sit at a special table at lunchtime on Fridays. The two children are served by a member of staff and they view it as a very prestigious reward for their efforts.*

Special events and theme days

29. Settings of all types used special theme days or events with some success to broaden the children's experience of food, as well as that of the parents/carers through involving them in a number of different activities.

*One **nursery and infant school** has established a regular 'Friday Cook Day'. The headteacher says:*

'We are about to begin our second year of Friday Cook Day. It is proving to be a popular way of involving parents/carers and an excellent one for motivating the children to learn in an enjoyable and practical way. Our aim is to offer the children the opportunity to experience all areas of learning to help them make good progress towards the early learning goals. The children experience a sense of satisfaction and sensory pleasure as they see the changes that occur in different foods as they

prepare and cook them. The food is served to the whole group in a 'healthy café': when the children eat together socially, they are more likely to try different foods. Parents/carers arrive to collect their children immediately after this experience; many comment about the 'lovely smell' and often enquire about the recipe, which has led us to display a list of ingredients for the parents/carers so that they are aware of what the children have eaten in the hope that they may think of providing the same.'

When Friday Cook Day started, the parents/carers were sent a leaflet about the scheme and asked to come in and help. The scheme is supported by a voluntary contribution of 80p a week and some parents/carers have donated food items; the local supermarket has contributed some free store-cupboard ingredients. There is a small, well-equipped kitchen in one of the rooms off the main nursery where the food preparation and cooking activities take place.

So far, they have made individual pizzas, fruit scones, cheesy muffins and banana bread. Whatever food is prepared, the work is planned to give the children high-quality food preparation experiences. For example, when they were making a vegetable stir-fry:

- they talked about the selection of different vegetables they were going to use*
- they were each given a small chopping board and sharp knife, which was just the right size for them to use safely and comfortably, in order to chop the vegetables efficiently*
- they put the vegetables and some instant noodles into an electric wok, raising their awareness of different ways of cooking foods, including those with which they were less familiar*
- all aspects of food hygiene were treated very responsibly and their importance explained to the children.*

*An **infant school** holds an annual Global Week. The teacher in charge describes the event:*

'In Global Week, we focus on different countries and cultures. It is a good way of broadening the children's experiences of less familiar or more unusual foods. We also try to use fresh ingredients rather than pre-packed convenience foods, again widening the children's experiences beyond what they may see at home.

Supervising sixty Reception year children making fresh pasta and tomato sauce may not appeal to everyone, but what an experience for a 4 year old! The same can be said about the event where we cooked an Indonesian feast outside in the school grounds and ate it with our fingers! These events were once seen as novel, but they are now an established part of life at our school. They help the children to enjoy working with food and give opportunities for the staff to convey important messages about healthy eating.'

Other barriers to providing effective food and nutrition education

30. A number of the challenges that face early years settings and schools in providing effective food and nutrition education have already been highlighted in this report. However, several other barriers exist to providing effective food and nutrition education. In particular there is an overarching need for the nutrition knowledge and practical food-handling skills of the staff responsible for the children in their care, whether they are senior managers, teachers, support staff, carers, caterers or supervisors, to be improved. Without this, it is difficult for high-quality food and nutrition education to be achieved.
31. There are numerous magazine articles, books, radio and television programmes, and web pages on the Internet, targeted at the general public, to explain nutrition issues. To address a wide range of interests, the messages are often skewed by a particular bias, view or opinion, and the underpinning scientific knowledge is often superficial and inaccurate. This often conflicting information sometimes leads to some confusion on the part of those responsible for teaching young children about food and health. Indeed, many adults were found to underestimate the level of subject knowledge that they need; many consider that little more than common sense is needed to do the job well. This lack of accurate and up-to-date subject knowledge is a key factor in impeding effective food and nutrition education, even in the schools and early years settings where effective practice exists. In the survey, staff frequently stated that the popular press was their main source of nutrition information.
32. In general, children find practical work with food very enjoyable: they are interested in the flavours and textures of the foods themselves and motivated by handling them, for example cutting and chopping, mixing, rubbing in and rolling out. They are also fascinated by the changes they observe as food is prepared and cooked. Therefore, staff and helpers try to incorporate practical work into the curriculum, but many face considerable challenges in doing so.
33. A very small number of the schools had specialist food preparation rooms but most had to use rooms that were also used for other purposes, such as teaching and storage. Early years settings, too, had to make use of the general facilities available to them. Such situations required very careful management and most of the settings found it difficult to provide a safe and hygienic food preparation environment where:
- the working surfaces are non-porous and able to be thoroughly cleaned before use (using an anti-bacterial cleaner that is also safe to use in a food preparation area) or covered with a washable covering that can be cleaned hygienically
 - children and supervisors are able to observe basic hygiene rules in terms, for example, of washing hands thoroughly and wearing clean aprons or other protective clothing that are kept solely for the purpose

- there is access to an adequate food storage facility, including a refrigerator for uncooked and cooked perishable products, a dry and well-ventilated cupboard for dry ingredients and a clean cupboard where utensils can be kept away from general equipment
- the cooker can be positioned to prevent the children having access to it unless under the supervision of an adult.

34. They also found it difficult to resource and organise the practical activities so that:

- the equipment was fit for purpose and suitable for small hands to manipulate. In general, the children used tools and equipment designed for adult use and effective working was sometimes hampered because they were blunt, bent or not fully functional. Knives for cutting, for example, were not always pointed and sharp enough for the children to use them efficiently, nor were they of the correct size to fit their hands comfortably. It was not always recognised that it is far better for the children to be taught to use sharp knives safely than to provide them with larger, blunt or plastic ones that are almost impossible to use successfully, or for the adults to do the job for them
- the cooking processes were clear and well thought out, and the procedures were followed consistently by all who supervised the children's work
- the children took as full a part in the activities as possible, rather than mainly observing others doing so.

35. A number of training and professional development initiatives have been developed to begin to address the issues of improving teachers' nutrition knowledge, their practical food-handling skills and their ability to plan and teach food and nutrition effectively. For example, because it is a statutory requirement that primary children in England experience work with food as part of the National Curriculum for design and technology, Food Partnerships (www.data.org.uk) have been established in some areas as part of a joint Department of Health and Department for Education and Skills Food in School Programme. It brings together locally a number of primary school teachers with a specially trained secondary food specialist teacher to:

- increase the primary school teachers' confidence and competence in teaching about food and nutrition
- develop a supportive network between the schools with regard to food issues
- develop a coherent strategy for teaching food and nutrition at a local level
- increase pupils' experience of working with food

- increase pupils' knowledge of food and nutrition
- help to raise standards of achievement in food education.

A **primary school** teacher took part in the activities of the Food Partnership in her area in which she:

- *examined the range and types of food in terms of classifying them according to origin, the range of forms in which they are available (fresh, processed, as single commodities and combinations of commodities to make products) and grouping them in food groups according to The Balance of Good Health*
- *considered the effects of taste, texture, odour and appearance on the enjoyment of food*
- *prepared and cooked foods to develop her basic food preparation skills and her ability to select and use a range of equipment and to maintain a safe and hygienic environment*
- *began to consider the basic principles underpinning food processing techniques, both domestic and commercial.*

She discussed ways that the secondary school teacher could support her further in teaching food-related aspects of design and technology to pupils in Year 5. They decided to focus on one of the units devised by the Qualifications and Curriculum Authority, entitled 'Biscuits'. It was intended that the children learned how to adapt a basic recipe to develop a biscuit to celebrate a particular festival or celebration.

The teachers jointly planned and taught three sessions:

- *in the first, the class teacher introduced the children to the topic and the range of different sweet and savoury biscuits and cookies available on the market. They undertook sensory evaluation in which they assessed the taste, texture, smell and appearance of the products and discussed how the different ingredients in the biscuits, and the ways in which they had been made, affected the sensory characteristics of the final products. They also looked at the nutritional composition of the biscuits as stated on the packets. The specialist food teacher acted as an adviser to the class teacher in this lesson*
- *in the second lesson, the specialist food teacher taught the session with the class teacher observing. The specialist teacher demonstrated the basic processes of rubbing in, shaping and moulding the dough, creating the shapes and preparing the product for cooking. The class teacher was able to refresh, review and consolidate her own skills as she observed, as well as improving her knowledge of the characteristics of ingredients and their functions in different*

products. The children were given the brief to produce cookies of a uniform shape and size, with particular sensory attributes and within a strict budget. They worked with their class teacher to draw up their design ideas and product specifications ready for the next lesson

- *in the final lesson, the specialist food teacher and the class teacher worked together as the children made and assessed their biscuits against the specifications that they had drawn up.*

As a result of this support, the class teacher improved:

- *her basic knowledge of a small range of simple ingredients, which allowed her to relate the quantities used in the recipes and the processes used to make the biscuits to their functional and nutritional properties*
- *her knowledge of the processes involved in sensory assessment and how to build up a bank of sensory vocabulary to describe the attributes of different products*
- *her organisational skills to ensure that the children carried out practical activities safely*
- *her basic food-handling skills to help her make a high-quality product for the children to see and aim for in their own work*
- *her understanding of how to ensure that a hygienic food preparation environment is established and maintained throughout the practical food handling activities*
- *her confidence to teach food and nutrition competently and in an enjoyable and stimulating way.*

36. However, this type of training is not available across the whole of the country, yet teachers and other members of staff, including caterers, lunchtime supervisors, as well as parents/carers, need access to up-to-date knowledge of food and nutrition if what is taught and the messages conveyed to the children are to be consistent and accurate. Their nutrition knowledge might be improved by:

- having access to accurate and up-to-date information from reputable sources
- making links with specialist partners who are able to reinforce and extend their understanding, such as the local primary care trust, the school nurse or health visitor, local education authority advisers and the National Healthy School Standard co-ordinator
- taking part in training that gives everyone, including parents/carers, the opportunity to improve their knowledge

- deciding how the information is to be kept up to date through an organised filing system (perhaps overseen by a member of the support staff or an interested parent/carer) and how to disseminate it to all interested parties.

*Staff in one **infant school** wanted the parents/carers to work with them in reinforcing the range of healthy eating messages that were being promoted in all aspects of the school's work. They decided that, at the next open day, they would put up a display of some of the work that the children had done and accompany it with suggestions about how the parents/carers might engage their children in a range of food activities at home, informed by information that they had downloaded from a reputable website (www.nutrition.org.uk). They also set up a display on healthy lunchboxes, based on a leaflet that they had obtained from the same website in the hope that the parents/carers would reinforce the messages that the school was trying to promote when deciding what their children should eat for their packed meals. They included actual examples of the menus and worked out the cost of each lunchbox to try to reassure parents/carers that a healthy lunchbox does not have to be an expensive one.*

The parents/carers found the information informative, interesting and motivating. The staff noticed a considerable difference in the range of foods that the parents/carers began to include in their children's packed meals. They took the opportunity to comment on this whenever they saw the parents/carers, who began to feel as though they played a significant part of the school's drive towards healthier eating.

Conclusion

37. There is a growing concern about the state of children's health in the UK and considerable attention is being focused on ways to improve it. However, it is evident from the inspection that there are still considerable gaps to be addressed, particularly in schools, even in those settings where food and nutrition is thought to be important. Nonetheless, the case studies in this report show there are some excellent individual examples of good practice, which could provide sources of inspiration for others to adopt or adapt to the needs of their own schools or early years settings. These examples also illustrate the various strands which, when taken together, provide a fuller picture of what is desirable and attainable through a planned and coherent approach to food and nutrition. A good starting point is the writing of a food policy, as outlined in the report, so that key aims can be defined and all involved know what is expected of them. The National Standards for under 8s day care and childminding represent a baseline of quality below which no provider may fall. With regard to encouraging healthy lifestyles in nursery settings, Standard 8 covers provision of fresh drinking water and awareness of children's dietary (including religious) requirements and allergies (the registered person requests information from the parents about any food allergies the child may have). Food and drink must be properly prepared and be nutritious. The following link gives more information:
<http://www.surestart.gov.uk/ensuringquality/standardsandregulation>.
38. It is clear that teachers and others who support children's learning have a genuine interest in healthy eating and are keen to learn ways of promoting it, many actively looking for ways to incorporate it more effectively into the formal and informal curriculum. Children, too, generally have a real enthusiasm for this aspect of their work. But to improve the quality of food and nutrition education further, there are several key aspects to be addressed. In particular, those who teach it need to be made aware of reputable sources of accurate and current nutritional information, provided with easy access to this and encouraged to make regular use of it. There also needs to be training generally available throughout England to develop their confidence and competence in practical food handling skills, such as the Food Partnership scheme illustrated in one of the case studies.
39. It is also clear from this report that other adults, particularly catering staff in schools, need up-to-date factual information, support and training to enable them, through the food they provide, to reflect and convey healthy eating messages and to put them into practice.
40. Finally, the involvement of the children themselves in the decisions taken about the food that is provided is vital if improvements in provision are to go hand in hand with changes in behaviour. This could be through adoption of School Nutrition Action Groups (www.healthedtrust.com) or school councils or other ways of consulting them. However, lasting and effective adoption of positive dietary habits by children cannot be achieved unless the parents/carers know, understand and support them.

Annex A

Steps in devising a food policy

Step 1. Establishing the need

- *Why have a policy?*
- *What are our needs? How do we know?*
- *What are we seeking to achieve? What benefits do we see for the setting/school, the children, the staff, the parents/carers?*
- *What resources will we need? Do we have them?*
- *Who will lead its development? Who else will help?*

Step 2. Conducting an audit

- *Why conduct an audit?*
- *What are the stages?*
- *Who will carry it out?*
- *Who should be consulted?*
- *Have we analysed the formal curriculum to identify where food and nutrition is addressed? Is the curriculum up to date and relevant?*
- *Have other activities been considered (such as clubs, tuck shops, snacks and meals)?*

Step 3. Drafting the policy

- *Does it contain all the necessary components?*
- *Does it address the formal and the informal curriculum, so that every aspect of learning has been considered in a co-ordinated and systematic way?*
- *What should the headings be?*
 - *aim (why are we writing the policy?)*
 - *objectives (what do we want to achieve?)*
 - *guidelines (how will the objectives be met?)*
 - *monitoring and evaluation (how will we know whether the objectives are being met?)*
 - *date agreed, review date, rights of access, person responsible*
- *Does it need to be translated into other languages?*

Step 4. Consulting others

- *Have all the consequences of the policy been considered?*
- *Who shall we consult about the policy? Who are the stakeholders?*
- *What will we ask them:*
 - *are the aims and objectives clear?*
 - *is the policy clear, explicit and straightforward?*
 - *is it realistic (time, resources, staff training, workload)?*
 - *does it address our specific needs well?*
 - *will it achieve the benefits being sought?*

Step 5. Modifying the draft policy

- *Which points shall we take account of and which will we reject? Why?*

Step 6. Disseminating the revised policy

- *Who needs to have a copy? What is our dissemination plan? By what means will it be disseminated among the wider community such as parents/carers (flyer, display in the entrance?)*
- *Is there a role for a school council or other group so that the children are informed about what is going to happen as a result of the policy?*

Step 7. Implementing the policy

- *What is the best way of implementing the policy to ensure that its aims and objectives are met?*
- *Who is responsible for doing so? What are their responsibilities?*
- *Is everyone else aware of their responsibilities? What are they? Do they know? How do they know? How will they be supported?*

Step 8. Monitoring, evaluating and refreshing the policy

- *Are the objectives being met? How do we know?*
- *What difficulties have arisen? Why? What were the solutions?*
- *What has gone well? Why? How can we build on this success?*
- *What do parents/carers and children think about the policy? How will we get their views? How often?*
- *Has the policy made a difference (food choice? attendance? behaviour? attainment?). How do we know?*
- *What are our needs now? What next?*

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Websites

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- www.nutrition.org.uk British Nutrition Foundation
- www.data.org.uk Design and Technology Association
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