

## Hot school dinners in Hull

In 2004 the city of Kingston-upon-Hull acted ahead of school meal legislation and applied to the Government for the Power to Innovate; to provide school meals free of charge to all children attending primary and special schools. The provision of free healthy schools meals was one of the City's initiatives to reduce obesity, increase school attendance, attainment and performance, and thereby improve the future productivity for the City. It was hoped that provision of free school food would provide all these children with the necessary nutrients for good health. The Government granted a three year pilot and the scheme called Eat Well Do Well (EWDW) began in April 2004. This report provides a brief overview of some of the nutritional research which was conducted at the University of Hull during the EWDW programme.

All 71 primary schools in Hull took part in the EWDW programme and each school followed specified recipes and menu options which had been nutritionally balanced to conform to the Caroline Walker Trust (CWT) nutritional guidelines. Each day three meal options were available for children to select from; generally this consisted of a meat option, a vegetarian option and a jacket potato option. Each day there was one more popular option. In order to assess how the school's food provision compared to the CWT recommended guidelines the most popular choice each day, served with vegetables and the most popular dessert and drink were included in the analysis. The menu is detailed below:

### Menu

The menu presented in both schools during this period consisted of:

**Monday:** Spicy Beef with rice and a pitta bread, carrots, broccoli, sugar free jam scone and apple juice.

**Tuesday:** Roast turkey with stuffing, boiled potatoes, green beans and carrots, tomato and herb bread, fruit cocktail and glass of milk.

**Wednesday:** Jacket potato with tuna, cauliflower and cabbage, tomato and herb bread, semolina and glass of water.

**Thursday:** Lemon chicken, tomato pasta, broccoli, cauliflower, bread, yoghurt and a glass of orange juice.

**Friday:** Haddock in breadcrumbs, boiled potatoes, peas, sweetcorn, bread, fruit mousse and crumble topping and a glass of apple juice.

This picture shows a typical school meal. This meal consists of roast turkey, stuffing, boiled potatoes, carrots and green beans, tomato and herb bread, with a sugar free jam scone for desert and a drink of fresh apple juice.



An analysis of the food provided highlighted that the food provided met the Caroline Walker Trust (CWT) recommended nutritional guidelines for the majority of nutrients assessed.

The lunch time recommended provision for protein is 8.5g, this menu exceeded that requirement by more than four times. No upper limit is set for protein in these guidelines so this amount is not outside the guidelines, but this menu would provide more than a child's total daily requirement for protein of 28.5g.

This table highlights that although the food provided met the majority of the nutritional criteria suggested by the CWT guidelines, actual food consumed did not meet the recommended guidelines. Children's actual average intake for the week was lower than recommended on energy and carbohydrates and vital nutrients such as fibre, iron, zinc and vitamin A.

**Mean lunch time nutritional provision and consumption over a five day period in comparison to the CWT recommended guidelines**

Nutrients	Recommended	% of recommended provided	% of recommended actually consumed n = 39
Energy (kcal)	557	128	<b><u>67</u></b>
Fat (g)	≤ 21.6	61	34
Saturated Fat (g)	≤ 6.8	63	41
Protein (g)	≥ 8.5	456	247
Carbohydrate (g)	≥ 74.2	154	<b><u>78</u></b>
NME Sugar (g)	≤ 16.3	<b><u>113</u></b>	43
Fibre (g)	≥ 4.5	144	<b><u>61</u></b>
Iron (mg)	≥ 3.5	<b><u>94</u></b>	<b><u>43</u></b>
Zinc (mg)	≥ 2.8	125	<b><u>63</u></b>
Calcium (mg)	≥ 220	284	134
Vitamin A (µg)	≥ 200	125	<b><u>48</u></b>
Vitamin C (mg)	≥ 12	617	271
Folate (µg)	≥ 60	230	102
Sodium (mg)	≤ 600	97	56

Results outside the CWT recommended guidelines are highlighted in red and underlined.

## Figure 2: Example of meals before and after consumption in school A and B

The meal consists of roast turkey, stuffing, gravy, potatoes and in school A, carrots and green beans.

### Example of a meal in school A



This is a typical before and after picture and it highlights how children consumed the foods they liked and left the rest. The provision of vegetables led to children consuming a little of these which helped to increase their daily intake of nutrients such as fibre, zinc, vitamin A and C. Schools which did not provide vegetables to all children invariably resulted in children obtaining a lower nutrient intake at lunch time.

## Conclusion

The findings from this research reveal that although the food provided by the two schools met the majority of the Caroline Walker Trust (CWT) nutritional guidelines for primary school lunch, the food consumed by the children did not. Children tended to eat the foods they liked and leave the rest, potatoes and vegetables were often wasted resulting in poor macro and micro nutrient intakes. Children were offered choices each day which allowed similar foods to be consumed on consecutive days and therefore did not obtain the variety of micronutrients required. Children consuming the free healthy school dinners had intakes of carbohydrates, fibre, iron, zinc and vitamin A below the recommended amounts when compared to the CWT guidelines. This is a considerable finding in schools working towards the new nutritional guidelines in order to improve children's nutrient intake and therefore possibly their health and academic attainment.

## Methods to improve school meal provision and children's nutrient intake

- Schools should involve children in any changes to school meals service, children should be consulted over the menu planning and food provision.
- Food must be attractive and nicely presented to encourage consumption.
- Food provided should reflect what is taught in the classroom.
- A School Nutrition Action Group should be used to encourage and enable children to play a role in promoting consumption of healthier foods in school.
- Vegetables or salad should be provided with each meal.
- Vegetables and fruit should be colourful and in abundance to encourage consumption.
- A salad bar should be provided where children can help themselves to further salad items. The salad bar should be maintained throughout service and should be attractive to children.
- Parents should be informed to the school's food aims, school menus should be sent home on a regular basis.
- Children and parents should be invited to school meal taster sessions.
- Nutritionally balanced bagged lunches should be an option in school for those children who do not want a full meal. Children and/or parents sometimes prefer sandwiches at lunch time.
- Snack bars and fast food options which conform to healthy eating requirements should be considered.
- The school dining room should be a pleasant place to eat, considerations should be made for time allocated to children to eat, the environment in which it is provided and the presentation of the food itself.

For more information contact Dr Lisa Gatenby: [l.gatenby@leedstrinity.ac.uk](mailto:l.gatenby@leedstrinity.ac.uk)

Related article:

Gatenby LA. (2007). Nutritional content of school meals in Hull and the East Riding of Yorkshire: a comparison of two schools. *Journal of Human Nutrition and Dietetics*. **20** 538-48.