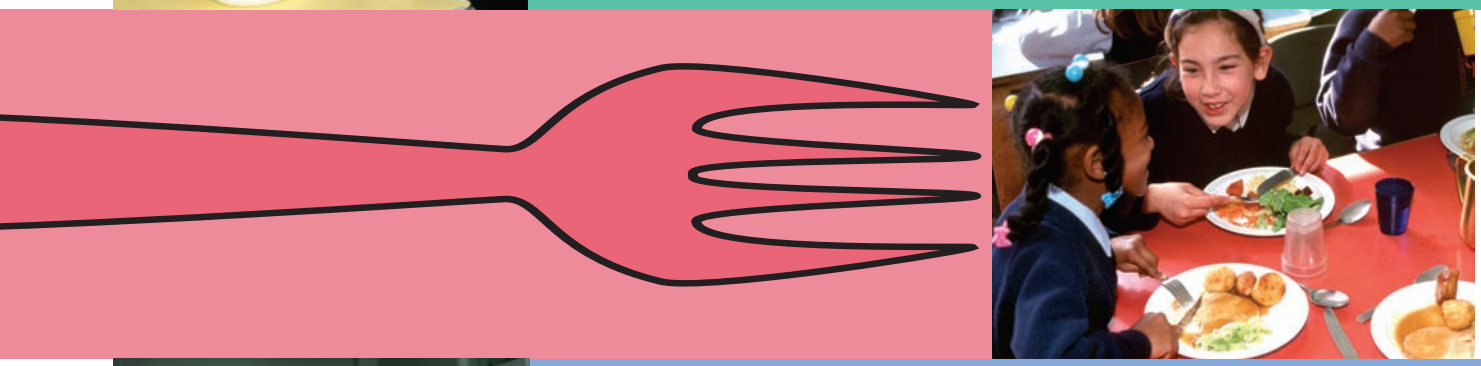
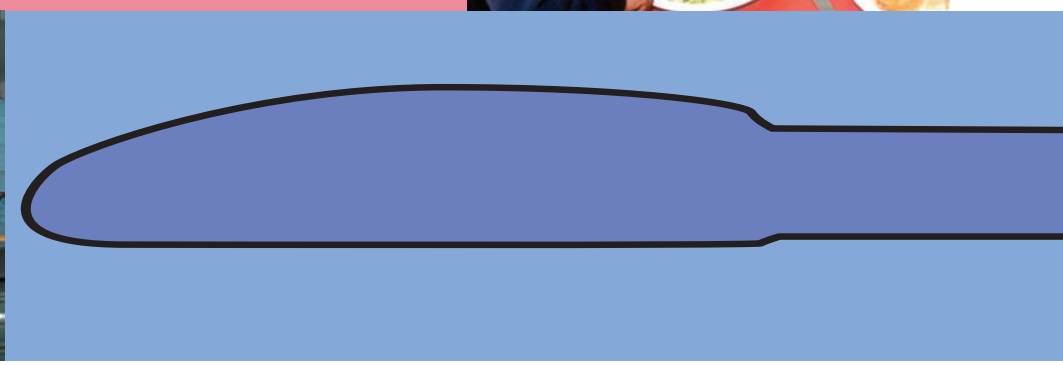
Nutrient-based standards for school food

A summary of the standards and recommendations of the Caroline Walker Trust and the National Heart Forum





Produced by NATIONAL HEART FORUM and THE CAROLINE WALKER TRUST

Nutrient-based standards for school food

A summary of the standards and recommendations of the Caroline Walker Trust and the National Heart Forum

By Dr Helen Crawley

This report is a summary of the nutrient-based standards taken from the report *Eating Well at School: Nutritional and Practical Guidelines*, which will be produced by the Caroline Walker Trust and the National Heart Forum in autumn 2005.

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Introduction

The Caroline Walker Trust was set up in 1987 to improve public health through good food. It produced its first Expert Report *Nutritional Guidelines for School Meals*[1] in 1992, and this has been widely used as the definitive document for nutrient-based standards for school meals. Those standards were used as the basis for the statutory standards for school meals in Scotland, which were introduced in primary schools in 2004 and secondary schools in 2005 through the Hungry for Success programme.[2] The standards have also been appended to current Government guidance in England and Wales, although they were not made statutory at the last review of school meal standards in 2001.[3]

Both the Caroline Walker Trust (CWT) and the National Heart Forum (NHF) are dedicated to the promotion of advice and guidance to all those who have the ability to influence and promote eating well among the population. In this latest report, CWT and NHF have joined forces to update the 1992 nutrient-based standards to reflect new scientific evidence and policy in this area. This report goes further than the original 1992 publication as it looks not only at school lunches but also at food and drinks available in school throughout the school day, including at breakfast clubs and in after-school care.

Why we need nutrient-based standards

On average a total of nearly 3 1/2 million meals are served in school every day in England and Wales, with 45% of children and young people in schools using the school meals service.[4] In England, 16.8% of primary school children and 14.5% of secondary school children were entitled to free school meals in 2004, as were 19.4% and 16.8% of Welsh primary and secondary school pupils respectively.[4]

Evidence collected in 2004 by the Food Standards Agency (FSA) and the Department for Education and Skills of catering practices and food provision in 79 secondary schools in England has shown that the current national

nutritional standards are failing to encourage children to select combinations of foods that contribute to a healthy diet.[5]

Since the first CWT school meal guidelines were published in 1992, the number of school-aged children in England and Wales who are overweight or obese has doubled[6] and evidence from the National Diet and Nutrition Survey of young people in Britain aged 4-18 years published in 2000[7] suggests that:

- For many children, intakes of saturated fats and sugars are high, and intakes of vitamin A, riboflavin, folate, zinc, iron, magnesium, calcium, potassium and iodine are often low, compared with reference nutrient intakes*.
- Children are eating less than half the recommended 5 portions of fruit and vegetables a day, and 20% of 4-18 year-olds surveyed ate no fruit at all in an average week.
- Fifty-eight per cent of 7-10 year olds and 78% of 15-18 year olds are largely inactive, spending less than an hour a day participating in activities of moderate intensity.

The benefits of nutritionally balanced school food

Improving the nutritional quality of school food supports policies across government to improve children's health, education and well-being, to tackle the burden of chronic disease, and to reduce inequalities. More nutritious school food could help to reduce diet-related health problems such as obesity, cancer, coronary heart disease and diabetes – diseases which are estimated to cost the NHS some £4 billion annually.[9]

Improving the health and nutrition of school-aged children remains a priority and is increasingly urgent: the health implications of poor food provision in school highlighted by CWT in 1992 are sadly manifest in the current school-aged population. While CWT and NHF welcome the Government's new commitment to improving food in schools in England and Wales,[10] there remains a need for clear, independent advice on food in schools and continued campaigning for standards that are both nutrient-based and food-based, detailed monitoring of their implementation and effectiveness, and partnership working throughout the education system to promote eating well.

This summary report contains the new Caroline Walker Trust standards for school food in advance of the full report *Eating Well at School: Nutritional and Practical Guidelines* which will be published by the Caroline Walker Trust and the National Heart Forum in autumn 2005. (For details of how to order the full report, see page 2.)

* A reference nutrient intake (RNI) is the amount of a nutrient that is likely to meet the requirements of nearly everybody in a group.[8]

Nutrient-based standards for school food

Basic principles

This section contains the nutrient-based standards for school food. If school menus achieve these standards, and include a wide variety of foods, they are likely to make a significant contribution to the nutrients that children and young people need for good health and growth.

The standards include values for energy, macronutrients (protein, fat, saturated fat, total carbohydrate, non-milk extrinsic sugars and fibre), and the micronutrients iron, zinc, calcium, vitamin A, vitamin C, folate and sodium. The Expert Working Group recognises that a number of other micronutrients have been found to be insufficient in the diets of some children and young people (ie. riboflavin, magnesium, potassium and iodine) but believes that, if the food served in schools contains the amounts of nutrients and foods as specified on pages 10-19, children and young people will get sufficient amounts of all required micronutrients.

The standards are based on current dietary reference values published by the Department of Health in 1991.[8] Dietary reference values are the amounts of energy and nutrients needed by groups of people. They are the benchmarks which can be used to ensure that the needs of all the individuals in a population group are likely to be met. They also provide the basis for planning the diets for groups of people. Additional information on salt intakes was provided by the Scientific Advisory Committee on Nutrition (SACN) in 2003.[11]

The standards also include recommendations on fruit and vegetables, oily fish and fried or processed potato products.

Targeting those most in need

It is known that many children and young people do not get enough of certain important nutrients – for example iron, calcium, zinc, vitamin A, vitamin C and folate.[7] In the nutrient-based standards on pages 10-19, the guideline for

the proportion of the daily intake of these nutrients to be obtained from the school lunch has been increased in relation to energy, in order to protect individuals from insufficiency. So for example, although the guideline for energy from the average day's school lunch is 30% of the total day's intake, the guideline for iron is 40% of the total day's intake. The reason for this is that the majority of some nutrients are likely to be consumed at mealtimes rather than between meals as snacks, and therefore meals should provide a greater proportion of some important nutrients.

The Expert Working Group also recommends that in a group of children or young people, the nutrient-based standards should meet the requirements of those children with the greatest needs. So, among mixed gender groups of children, the standard for iron will meet the needs of those girls in the group who have higher requirements, and the standards for calcium, zinc and vitamin A will meet the greater needs of the boys in the group. For single gender schools the figures relate to that gender only.

Meeting the standards

The nutrient-based standards in this report provide figures for the recommended nutrient content of an average meal provided for children and young people in school over a period of one week or more. They are intended to provide a basis for nutritional standards in the specifications for contracts set by local education authorities and schools and for menu planning and monitoring.

The standards are to be used for planning the *supply* of food. This means that caterers and menu planners should be able to demonstrate that the food they are offering over a period of one week or more is able to meet the standards specified.

There is an urgent need for an easy-to-use computer-based tool to enable menu planners to devise menus which meet the nutrient-based standards. This tool should contain detailed and appropriate information on the composition of foods and recipes served in schools so that all those involved in the food system are able to make clear judgements on the suitability of menus based on the same information. One such computer program has been developed for use by all those responsible for planning and evaluating school meals in Scotland.[12] The development of similar tools for use in England, Wales and Northern Ireland will be an essential part of the implementation of these standards.

Caterers will also need to optimise the nutritional quality of food *served* by following good practice in food preparation and serving. Nutrient losses in storage of food and cooking should be minimised.

On any menu there are likely to be a range of foods, and combinations of foods, of differing nutrient composition. In order to ensure that children and young people do not consistently choose less good meal options, steps will need to be taken to positively promote healthier options and combinations of foods through careful marketing. Caterers should also consider the implications of children and young people choosing particular 'routes' through their menus. For example, if children and young people have to select a meal with *either* a soup *or* a pudding, will those on both 'routes' meet the guidance? For those who are vegetarian, will the vegetarian options on the menu fulfil the standards?

The Expert Working Group recognises that schools will need to make changes in catering practice over a period of time (for example six to nine months) in order to meet these standards. The standards provide the reference against which changes and improvements in school food can be assessed. The Expert Working Group also appreciates that the improvement of school food will be developmental and involve a whole-school approach but believes that it is essential that the standards become compulsory.

The basis for the nutrient-based standards for school food

Energy

The dietary reference values suggested for energy meet the requirements for growth, weight maintenance and physical activity. They vary according to age, gender and physical activity.

It has to be assumed that children and young people will eat to appetite at mealtimes: those with higher energy needs are likely to eat greater amounts of food to sustain higher energy requirements. The amount of energy consumed should however match the amount of energy expended.

Children and young people are unlikely to gain excessive amounts of weight from school meals that fulfil the standards on pages 10-19, provided they undertake moderate amounts of activity. Excess energy intake is more likely to be associated with snacking between meals on foods that are energy-dense (such as confectionery, savoury snacks and soft drinks) or with eating meals that do not fulfil the standards suggested here, as well as with low activity levels. There is likely to be a significant proportion of children and young people for whom the food provided in school remains the main source of food each day, and it is important for this group that the food provided should make a significant contribution to their requirements.

The amounts of fat and carbohydrates in school food are based on the amount of energy that these macronutrients provide, as recommended by the Department of Health.[8]

Protein and micronutrients

The reference nutrient intake (RNI) has been chosen as the appropriate dietary reference value for planning food supplied in school meals for protein and micronutrients (vitamins and minerals).

The RNI is the amount of a nutrient which is sufficient to meet the dietary requirements for about 97% of the children or young people in a group (defined by age and sometimes by gender). Intakes above this amount will almost certainly be adequate.

How the standards should work in primary schools

It should be straightforward to adopt and implement the standards for primary schools since most food systems still provide a choice of main or light meals and puddings for a school lunch, and children are generally encouraged to consume all the elements of a meal. However, to encourage all pupils to make good choices, it will be necessary to put some restrictions on how frequently those components that contribute less to good meal choice are served. For example, fried or processed potato products should not be offered on the school lunch menu more than once a week.

How the standards should work in middle and secondary schools

The majority of middle and secondary schools offer a cash cafeteria system for school lunches, which allows young people to choose any number of options each day, whether as part of a meal or to make up a full meal. It is essential that within every cash cafeteria service there is a choice of full meal options available (which can be hot or cold) which meet the standards in this report. These meal options should be heavily promoted and – in conjunction with measures to remove stigmatisation about the receipt of free school meals – should be encouraged as the meal of choice for this group of young people.

The Expert Working Group recognises that some young people will not choose to have a whole meal option. In order to ensure that the choices made as far as possible fulfil the requirements for a balanced diet (as outlined in full in the *Eating Well at School: Nutritional and Practical Guidelines* report – see page 2), it is strongly recommended that service providers consider the options they make available and positively promote a range of healthy meal components. Limiting the range of options available at lunch time and at other times in the day to healthier options will help to ensure that more pupils make healthy choices.

School lunches

TABLE 1: Nutrient-based standards for SCHOOL LUNCHES for children and young people aged 5–18 years: SUMMARY OF RECOMMENDATIONS

The table below summarises the proportion of nutrients that children and young people should receive from a school lunch. The figures are for the recommended nutrient content of an average lunch provided for children and young people over a one-week period.

TABLE 1

Energy	30% of the estimated average requirement (EAR)
Fat	Not more than 35% of food energy
Saturated fat	Not more than 11% of food energy
Total carbohydrate	Not less than 50% of food energy
Non-milk extrinsic sugars	Not more than 11% of food energy
Fibre	Not less than 30% of the calculated reference value*
Protein	Not less than 30% of the reference nutrient intake (RNI)
Iron	Not less than 40% of the RNI
Zinc	Not less than 40% of the RNI
Calcium	Not less than 40% of the RNI
Vitamin A	Not less than 40% of the RNI
Vitamin C	Not less than 40% of the RNI
Folate	Not less than 40% of the RNI
Sodium	Not more than 30% of the SACN recommendation
Fruit and vegetables	Not less than 2 portions
Oily fish	On the school lunch menu at least once a week
Fried or processed potato products	Not on the school lunch menu more than once a week

Salt: Salt should **not** be made available at counters or at tables.

Water: Free, fresh, chilled water should be available to children and young people at school.

* For details of the calculated reference value for fibre, see Appendix on page 26.

EAR = Estimated Average Requirement **RNI** = Reference Nutrient Intake **SACN** = Scientific Advisory Committee on Nutrition
For an explanation of EAR and RNI, see below.

Estimated Average Requirement (EAR)

This is the average amount of energy or nutrients needed by a group of people. Half the population will have needs greater than this, and half will have needs below this amount.

Reference Nutrient Intake (RNI)

This is the amount of a nutrient which is enough to meet the dietary requirements of about 97% of a group of people. If people get more than this amount they will almost certainly be getting enough.

Food served in schools throughout the school day

The Expert Working Group has also specified the proportions of nutrients that should be provided for children and young people who receive other food and meals in school, for example at breakfast clubs or in after-school care. These are outlined in Tables 2-4.

TABLE 2: BREAKFAST AND LUNCH in school: nutrient-based standards for children and young people aged 5–18 years

The table below summarises the proportion of nutrients that children and young people should receive if they have breakfast and lunch at school. The figures are for the recommended nutrient content of an average breakfast and lunch provided for children and young people over a one-week period.

	Breakfast	Lunch	Home
Energy % of EAR	20%	30%	50%
Fat, saturated fat, total carbohydrate, non-milk extrinsic sugars % of food energy	20%	30%	50%
Fibre % of the calculated reference value*	20%	30%	50%
Protein % of the RNI	20%	30%	50%
Iron, zinc, calcium, vitamin A, vitamin C, folate % of the RNI	20%	40%	40%
Sodium % of the SACN recommendation	20%	30%	50%
Fruit and vegetables portions	1	2	2+
Oily fish	On the school lunch menu at least once a week		
Fried or processed potato products	Not on the school lunch menu more than once a week		

TABLE 2

* For details of the calculated reference value for fibre, see Appendix on page 26.

EAR = Estimated Average Requirement **RNI** = Reference Nutrient Intake **SACN** = Scientific Advisory Committee on Nutrition
For an explanation of EAR and RNI, see page 10.

TABLE 3: BREAKFAST, LUNCH AND AFTER-SCHOOL SNACK in school: nutrient-based standards for children and young people aged 5–13 years

The table below summarises the proportion of nutrients that children and young people should receive if they have breakfast and lunch at school and stay in after-school care for 2 hours or less, receiving only a snack. The figures are for the recommended nutrient content of an average breakfast, lunch and after-school snack provided for children and young people over a one-week period.

	Breakfast	Lunch	After-school snack	Home
Energy % of EAR	20%	30%	10%	40%
Fat, saturated fat, total carbohydrate, non-milk extrinsic sugars % of food energy	20%	30%	10%	40%
Fibre % of the calculated reference value*	20%	30%	10%	40%
Protein % of the RNI	20%	30%	10%	40%
Iron, zinc, calcium, vitamin A, vitamin C, folate % of the RNI	20%	40%	10%	30%
Sodium % of the SACN recommendation	20%	30%	10%	40%
Fruit and vegetables portions	1	2	1	1+
Oily fish	On the school lunch menu at least once a week			
Fried or processed potato products	Not on the school lunch menu more than once a week			

TABLE 3

* For details of the calculated reference value for fibre, see Appendix on page 26.

EAR = Estimated Average Requirement **RNI** = Reference Nutrient Intake **SACN** = Scientific Advisory Committee on Nutrition
For an explanation of EAR and RNI, see page 10.

TABLE 4: ALL-DAY SCHOOL: nutrient-based standards for children aged 5–13 years

The table below summarises the proportion of nutrients that each eating occasion in school should achieve for children who are in all-day school, spending more than 2 hours in after-school care. The figures are for the recommended nutrient content of an average breakfast, lunch, after-school snack and after-school 'meal' provided for children over a one-week period.

TABLE 4

	Breakfast	Lunch	After-school snack	After-school 'meal'	Home
Energy % of EAR	20%	30%	10%	20%	20%
Fat, saturated fat, total carbohydrate, non-milk extrinsic sugars % of food energy	20%	30%	10%	20%	20%
Fibre % of the calculated reference value*	20%	30%	10%	20%	20%
Protein % of the RNI	20%	30%	10%	20%	20%
Iron, zinc, calcium, vitamin A, vitamin C, folate % of the RNI	20%	40%	10%	20%	10%
Sodium % of the SACN recommendation	20%	30%	10%	20%	20%
Fruit and vegetables portions	1	2	1	1	*Preferably additional portions at home*
Oily fish	On the school lunch menu at least once a week				
Fried or processed potato products	Not on the school lunch menu more than once a week				

* For details of the calculated reference value for fibre, see Appendix on page 26.

EAR = Estimated Average Requirement **RNI** = Reference Nutrient Intake **SACN** = Scientific Advisory Committee on Nutrition
For an explanation of EAR and RNI, see page 10.

How do the standards translate into specific nutrients for school children of different ages?

Tables 5-11 on pages 13-19 show what the nutrient-based and food-based standards mean in terms of nutrients and foods for children at different types of school.

PRIMARY SCHOOLS

In primary schools there will be a wide range of appetites. The Expert Working Group agreed that, since menus in primary schools would be planned for all children together, caterers should achieve the standards based on the needs of children aged 7-10 years. Younger children will eat proportionally less to satisfy their appetites and caterers will use their skill and knowledge of the children to offer appropriately sized portions. By achieving the standards for older primary school-aged children, the needs of all children in the school will be met. Table 5 outlines the nutrient-based standards for primary schools for the whole school day. Some example meals which meet these standards are shown on page 20.

TABLE 5: Nutrient-based standards for PRIMARY SCHOOL CHILDREN aged 5–11 years, for breakfast, lunch and after-school care

This table provides figures for the recommended nutrient content of an average day's food and drink over a period of one week or more.

TABLE 5

			Breakfast	Lunch	After-school snack	After-school meal
Energy		kcals	371	557	186	371
Fat	MAX	g	14.4	21.6	7.2	14.4
Saturated fat	MAX	g	4.5	6.8	2.3	4.5
Total carbohydrate	MIN	g	49.5	74.2	24.7	49.5
Non-milk extrinsic sugars	MAX	g	10.9	16.3	5.4	10.9
Fibre	MIN	g	3	4.5	1.5	3
Protein	MIN	g	5.7	8.5	2.8	5.7
Iron	MIN	mg	1.7	3.5	0.9	1.7
Zinc	MIN	mg	1.4	2.8	0.7	1.4
Calcium	MIN	mg	110	220	60	110
Vitamin A	MIN	µg	100	200	50	100
Vitamin C	MIN	mg	6	12	3	6
Folate	MIN	µg	30	60	15	30
Sodium	MAX	mg	400	600	200	400
Fruit and vegetables	MIN	portions	1	2	1	1
Oily fish			On the school lunch menu at least once a week			
Fried or processed potato products			Not on the school lunch menu more than once a week			

Salt: Salt should **not** be made available at counters or at tables.
Water: Free, fresh, chilled water should be available to children and young people at school.

SECONDARY SCHOOLS

For secondary schools catering for children aged between 11 and 18 years, the Expert Working Group has calculated the nutrient-based standards on the assumption that 70% of the children having school meals would be aged 11-14 and 30% would be 15-18, as this is likely to be fairly representative of the age breakdown of typical school populations.

The figures given in Table 6 are for secondary schools of mixed gender and for single sex secondary schools. Table 7 gives the figures for sixth-formers aged 16-18 years. Some example meals which meet these standards are shown on page 21.

TABLE 6: Nutrient-based standards for SECONDARY SCHOOL CHILDREN aged 11–18 years, for breakfast and lunch

This table provides figures for the recommended nutrient content of an average day's breakfast and lunch over a period of one week or more.

TABLE 6

			ALL PUPILS 11-18 years		BOYS ONLY 11-18 years		GIRLS ONLY 11-18 years	
			Breakfast	Lunch	Breakfast	Lunch	Breakfast	Lunch
Energy		kcals	430	646	476	714	385	578
Fat	MAX	g	16.8	25.2	18.5	27.8	15.0	22.5
Saturated fat	MAX	g	5.3	7.9	5.8	8.7	4.7	7.1
Total carbohydrate	MIN	g	57.4	86.1	63.5	95.2	51.3	77.0
Non-milk extrinsic sugars	MAX	g	12.6	18.9	14.0	20.9	11.3	16.9
Fibre	MIN	g	3.5	5.2	3.8	5.7	3.1	4.6
Protein	MIN	g	8.8	13.3	9.2	13.8	8.5	12.7
Iron	MIN	mg	3.0	5.9	2.3	4.5	3.0	5.9
Zinc	MIN	mg	1.8	3.7	1.8	3.7	1.7	3.4
Calcium	MIN	mg	200	400	200	400	160	320
Vitamin A	MIN	µg	130	250	130	250	120	240
Vitamin C	MIN	mg	7.3	14.6	7.3	14.6	7.3	14.6
Folate	MIN	µg	40	80	40	80	40	80
Sodium	MAX	mg	470	710	470	710	470	710
Fruit and vegetables	MIN	portions	1	2	1	2	1	2
Oily fish			On the school lunch menu at least once a week					
Fried or processed potato products			Not on the school lunch menu more than once a week					

Salt: Salt should **not** be made available at counters or at tables.
Water: Free, fresh, chilled water should be available to children and young people at school.

TABLE 7: Nutrient-based standards for SIXTH-FORMERS aged 16–18 years, for breakfast and lunch

This table provides figures for the recommended nutrient content of an average day's breakfast and lunch over a period of one week or more.

TABLE 7

			ALL PUPILS 16-18 years		BOYS ONLY 16-18 years		GIRLS ONLY 16-18 years	
			Breakfast	Lunch	Breakfast	Lunch	Breakfast	Lunch
Energy		kcals	487	730	551	827	422	633
Fat	MAX	g	18.9	28.4	21.4	32.1	16.4	24.6
Saturated fat	MAX	g	6.0	8.9	6.7	10.1	5.2	7.7
Total carbohydrate	MIN	g	64.9	97.3	73.5	110.2	56.3	84.4
Non-milk extrinsic sugars	MAX	g	14.3	21.4	16.2	24.2	12.4	18.6
Fibre	MIN	g	3.9	5.9	4.4	6.6	3.4	5.1
Protein	MIN	g	10.0	15.0	11.0	16.6	9.0	13.5
Iron	MIN	mg	3.0	5.9	2.3	4.5	3.0	5.9
Zinc	MIN	mg	1.9	3.8	1.9	3.8	1.4	2.8
Calcium	MIN	mg	200	400	200	400	160	320
Vitamin A	MIN	µg	140	280	140	280	120	240
Vitamin C	MIN	mg	8	16	8	16	8	16
Folate	MIN	µg	40	80	40	80	40	80
Sodium	MAX	mg	470	710	470	710	470	710
Fruit and vegetables	MIN	portions	1	2	1	2	1	2
Oily fish			On the school lunch menu at least once a week					
Fried or processed potato products			Not on the school lunch menu more than once a week					

Salt: Salt should **not** be made available at counters or at tables.

Water: Free, fresh, chilled water should be available to children and young people at school.

FIRST, MIDDLE AND UPPER SCHOOLS, AND INDEPENDENT SCHOOLS

In some areas of the UK the school system offers first schools (5-8 years), middle schools (9-12 years) and upper schools (13-18 years) and this broadly also fits into independent education systems of pre-preparatory schools (5-7 years), preparatory schools (9-13 years) and senior schools (14-18 years).

First schools and pre-preparatory schools

The nutrient-based standards for first schools or pre-preparatory schools are based on the dietary reference values for 7-10 year-olds (for the same reason as explained on page 13 for all primary school children) and are therefore the same as the standards for all primary schools shown in Table 5 on page 13.

Middle schools and preparatory schools

The standards for middle schools or preparatory schools are calculated on the assumption that 50% of those receiving the school meals are aged 7-10, and 50% are aged 11-14. Table 8 gives the standards for mixed schools, and Tables 9 and 10 give the standards for single sex schools.

TABLE 8: Nutrient-based standards for MIDDLE SCHOOL CHILDREN aged 9–12 years, for breakfast, lunch and after-school care: ALL PUPILS

This table provides figures for the recommended nutrient content of an average day's food and drink over a period of one week or more.

TABLE 8

			Breakfast	Lunch	After-school snack	After-school meal
Energy		kcals	389	583	194	389
Fat	MAX	g	15.1	22.7	7.6	15.1
Saturated fat	MAX	g	4.8	7.1	2.4	4.8
Total carbohydrate	MIN	g	51.8	77.8	25.9	51.8
Non-milk extrinsic sugars	MAX	g	11.4	17.1	5.7	11.4
Fibre	MIN	g	3.1	4.7	1.6	3.1
Protein	MIN	g	7.0	10.4	3.5	7.0
Iron	MIN	mg	2.4	4.7	1.2	2.4
Zinc	MIN	mg	1.6	3.2	0.8	1.6
Calcium	MIN	mg	160	310	80	160
Vitamin A	MIN	µg	110	220	60	110
Vitamin C	MIN	mg	6.5	13	3.3	6.5
Folate	MIN	µg	35	70	20	35
Sodium	MAX	mg	430	650	220	430
Fruit and vegetables	MIN	portions	1	2	1	2
Oily fish			On the school lunch menu at least once a week			
Fried or processed potato products			Not on the school lunch menu more than once a week			

Salt: Salt should **not** be made available at counters or at tables.
Water: Free, fresh, chilled water should be available to children and young people at school.

TABLE 9: Nutrient-based standards for MIDDLE SCHOOL CHILDREN aged 9–12 years, for breakfast, lunch and after-school care: BOYS

This table provides figures for the recommended nutrient content of an average day's food and drink over a period of one week or more.

			Breakfast	Lunch	After-school snack	After-school meal
Energy		kcals	419	629	210	419
Fat	MAX	g	16.3	24.4	8.1	16.3
Saturated fat	MAX	g	5.1	7.7	2.6	5.1
Total carbohydrate	MIN	g	55.9	83.8	27.9	55.9
Non-milk extrinsic sugars	MAX	g	12.3	18.4	6.1	12.3
Fibre	MIN	g	3.4	5.0	1.7	3.4
Protein	MIN	g	7.0	10.6	3.5	7.0
Iron	MIN	mg	2.0	4.0	1.0	2.0
Zinc	MIN	mg	1.6	3.2	0.8	1.6
Calcium	MIN	mg	160	310	80	160
Vitamin A	MIN	µg	110	220	60	110
Vitamin C	MIN	mg	6.5	13	3.3	6.5
Folate	MIN	µg	35	70	20	35
Sodium	MAX	mg	430	650	220	430
Fruit and vegetables	MIN	portions	1	2	1	1
Oily fish			On the school lunch menu at least once a week			
Fried or processed potato products			Not on the school lunch menu more than once a week			

Salt: Salt should **not** be made available at counters or at tables.

Water: Free, fresh, chilled water should be available to children and young people at school.

TABLE 10: Nutrient-based standards for MIDDLE SCHOOL CHILDREN aged 9–12 years, for breakfast, lunch and after-school care: GIRLS

This table provides figures for the recommended nutrient content of an average day's food and drink over a period of one week or more.

TABLE 10

			Breakfast	Lunch	After-school snack	After-school meal
Energy		kcals	359	538	179	359
Fat	MAX	g	14.0	20.9	7.0	14.0
Saturated fat	MAX	g	4.4	6.6	2.2	4.4
Total carbohydrate	MIN	g	47.8	71.7	23.9	47.8
Non-milk extrinsic sugars	MAX	g	10.5	15.8	5.3	10.5
Fibre	MIN	g	2.9	4.3	1.4	2.9
Protein	MIN	g	7.0	10.4	3.5	7.0
Iron	MIN	mg	2.4	4.7	1.2	2.4
Zinc	MIN	mg	1.6	3.2	0.8	1.6
Calcium	MIN	mg	140	270	70	140
Vitamin A	MIN	µg	110	220	60	110
Vitamin C	MIN	mg	6.5	13	3.3	6.5
Folate	MIN	µg	35	70	20	35
Sodium	MAX	mg	430	650	220	430
Fruit and vegetables	MIN	portions	1	2	1	1
Oily fish			On the school lunch menu at least once a week			
Fried or processed potato products			Not on the school lunch menu more than once a week			

Salt: Salt should **not** be made available at counters or at tables.
Water: Free, fresh, chilled water should be available to children and young people at school.

Upper schools and senior schools

The standards for upper schools or senior schools are calculated on the assumption that 50% of those receiving the school meals are aged 13-14 years and 50% are aged 15-18. Table 11 gives the standards for both mixed schools and single sex schools.

TABLE 11: Nutrient-based standards for UPPER SCHOOL CHILDREN aged 13–18 years, for breakfast and lunch

This table provides figures for the recommended nutrient content of an average day's breakfast and lunch over a period of one week or more.

TABLE 11

			ALL PUPILS 13-18 years		BOYS ONLY 13-18 years		GIRLS ONLY 13-18 years	
			Breakfast	Lunch	Breakfast	Lunch	Breakfast	Lunch
Energy		kcals	447	670	500	743	396	593
Fat	MAX	g	17.4	26.1	19.3	29.0	15.4	23.1
Saturated fat	MAX	g	5.5	8.2	6.1	9.1	4.8	7.3
Total carbohydrate	MIN	g	59.5	89.3	66.3	99.5	52.7	79.1
Non-milk extrinsic sugars	MAX	g	13.1	19.7	14.6	21.9	11.6	17.4
Fibre	MIN	g	3.6	5.4	4.0	6.0	3.2	4.8
Protein	MIN	g	9.2	13.8	9.7	14.6	8.6	12.9
Iron	MIN	mg	3.0	5.9	2.3	4.5	3.0	5.9
Zinc	MIN	mg	1.9	3.7	1.9	3.7	1.6	3.2
Calcium	MIN	mg	200	400	200	400	160	320
Vitamin A	MIN	µg	130	260	130	260	120	240
Vitamin C	MIN	mg	7.5	15.0	7.5	15.0	7.5	15.0
Folate	MIN	µg	40	80	40	80	40	80
Sodium	MAX	mg	470	710	470	710	470	710
Fruit and vegetables	MIN	portions	1	2	1	2	1	2
Oily fish			On the school lunch menu at least once a week					
Fried or processed potato products			Not on the school lunch menu more than once a week					

Salt: Salt should **not** be made available at counters or at tables.

Water: Free, fresh, chilled water should be available to children and young people at school.

Example menus

Example menu for primary school children

Some example meals which would meet the nutrient-based standards for primary school age children are shown below.

	Monday	Tuesday	Wednesday	Thursday	Friday
Breakfast	Puffed wheat/shredded wheat/weet bisks/shreddie-type cereals with milk Orange juice Wholemeal toast and margarine or fresh fruit				
Lunch	Salmon fish cakes Jacket wedges Peas and sweetcorn Fruit salad Water	Chicken and broccoli lasagne Baguette Cucumber and carrot sticks Yoghurt and fresh fruit Water	Roast lamb in minted gravy Roast potatoes Carrots and French beans Apple and blackberry crumble Water	Spaghetti bolognese Mixed salad Apricot condé Water	Homemade cheese and tomato pizza Curried rice salad Mixed raw vegetable platter Fruit squares Water
Lunch (vegetarian)	Baked bean lasagne Baguette Carrot and cucumber sticks Banana and chocolate brownie Water	Homemade pizza Potato wedges Coleslaw Green and red pepper slices Ice cream with canned fruit Oat cookies Water	Vegetable curry Basmati rice Lentil dahl Chapati Greek yoghurt with pears Water	Vegetarian spaghetti bolognese Mixed salad Jellied fruit salad Water	Mexican beans New potatoes Broccoli florets Sweetcorn Apple cinnamon crumble and custard Water
After-school snack	Chewy cereal bar Clementine Milk	Chocolate chip cookies Dried apricots Milk	Breadsticks Raw baby carrots Raisins Milk	Popcorn Apple Milk	Fromage frais Orange Water
After-school meal	Jacket potato with tuna Sweetcorn Fruit yoghurt Water	Mexican chicken pasta salad in tortilla wrap Banana Water	Bean bake Wholemeal roll Melon Water	Spanish omelette Cherry tomatoes Cucumber Spiced apple cake Water	Farmhouse tomato soup Oaty scones Canned pineapple Water

Note: Milk drinks are based on 150ml portions of semi-skimmed milk. Calcium-fortified soya milk is an acceptable alternative.

Example menu for secondary school children

Examples of meals which would meet the nutrient-based standards for secondary school children for breakfast and lunch are shown below.

	Monday	Tuesday	Wednesday	Thursday	Friday
Breakfast	Puffed wheat/shredded wheat/weet bisks/shreddie-type cereals with milk Orange juice Wholemeal toast and margarine or fresh fruit or fruit yoghurt				
Lunch (cooked)	Beef curry Brown rice Lentil dahl Fruit salad and crème fraîche Milk	Homemade tuna pizza Jacket potato Baked beans Jelly yoghurt whip with fruit Milk	Spicy chicken casserole Noodles Green beans Steamed fruit pudding and custard Milk	Cowboy hotpot Boiled new potatoes Broccoli florets Spiced apple cake Milk	Salmon fishcakes Chips Carrots and peas Ice cream and fruit Milk
Lunch (vegetarian, cooked)	Vegetable and chickpea curry Chapati Lentil dahl Fresh fruit platter Milk	Lentil and tomato quiche Jacket potato Mixed salads Apple brown Betty Milk	Caribbean vegetable casserole Rice and peas Banana custard Milk	Three bean lasagne Broccoli spears Fruit mousse Milk	Spicy vegetable burgers in wholemeal buns Baked beans Fruit square Milk
Lunch (sandwich-type)	Onion bagel Egg salad Watercress Apricot oat bar Milk	Pitta bread with corned beef and coleslaw Celery Cherry tomatoes Greek yoghurt with raisins Milk	Tortilla wrap with smoked mackerel and sweetcorn Three bean salad Dutch apple tart Milk	Burger buns with homemade lentil or lamb burgers Raw carrot and red pepper slices Winter fruit salad Milk	Chicken tikka sandwiches on wholemeal bread Lettuce Banana and chocolate brownie Milk

Note: Milk drinks are based on 150ml portions of plain or flavoured semi-skimmed milk, milkshakes or smoothies (made with semi-skimmed milk and fruit) with an NMES content of up to 5g per 100ml. Calcium-fortified soya milk is an acceptable alternative.

Recommendations for school food

The following recommendations are taken from the report *Eating Well at School: Nutritional and Practical Guidelines*, to be produced by the Caroline Walker Trust and the National Heart Forum in autumn 2005. That report contains the evidence base and rationale for these recommendations. (For details, see page 2.)

Food policy

- The nutrient-based standards on pages 10-19 of this report should become compulsory for all school-aged children in England and Wales.
- Government departments should include reference to the nutrient-based standards in guidance and regulations to all those involved in the school meals service.
- Government should require the nutrient-based standards to be included in the school inspection process.
- Targets should be set locally to increase the number of children and young people eating school lunches, in order to increase the viability of the school meals service and encourage a greater number of school children to eat well. Overall targets should aim to get 95% of primary school children and 75% of secondary school children eating in school.
- Local education authorities and schools should draw up specifications for school meal tenders in line with the nutrient-based standards in this report. The Department for Education and Skills should provide a model template for this specification.
- Caterers, local education authority purchasing consortia and the Department for Education and Skills should cooperate to develop compulsory nutritional specifications (compositional standards) for all major commodities and foods used in schools.
- The cost of school meals needs to be addressed by both purchasers and providers. The uptake of meals will depend

to some extent on price as well as quality, and consideration should be given to meal-pricing policies and subsidies. In some areas free school meals for all pupils could be a cost-effective public health initiative.

■ The amount of money spent on food ingredients for school lunches should be adequate to achieve the recommendations in this report, and commitment should be made to increase this in line with inflation. It is unlikely that providers can meet the nutrient-based standards if they spend less than 70p on ingredients per pupil in primary schools, and 80p per pupil in secondary schools (2005 prices). These amounts should be kept under regular review.

■ Local education authorities across England and Wales should agree on a standard amount of money per meal to be delegated to schools for free school meals. That amount should reflect the average amount required to supply a good-quality two-course meal and a drink and should be universally implemented across all local education authorities.

■ All those responsible for food procurement should develop links with local sustainable food suppliers and set targets for the amount of locally sourced food, and organically grown food, that will be included in school meals.

■ Schools and local education authorities should ensure that adequate resources are available for appropriate kitchen tools and equipment to enable catering staff to provide food that meets the nutrient-based standards.

Training and support

■ Local authorities should provide training and information to all relevant staff to enable them to use the nutrient-based standards effectively.

■ Training programmes are needed for school meal providers to ensure that they understand the links between food and health, the marketing techniques needed to encourage the choice of healthy meals and the practical preparation methods which will allow the standards to be implemented.

■ All catering staff should receive training on good nutrition and menu planning. This could be part of their skills development plan. Local authorities and other providers should ensure that this training takes place at local level and is also made available to managers, inspectors and other relevant staff.

■ Teachers and support staff should be trained to enable all children and young people to acquire information on healthy eating, and practical experience in cooking, budgeting for food, shopping, menu planning, and food storage and handling during their school career.

■ A CD-ROM or Internet resource should be produced for all local education authorities and schools to help relevant staff produce nutritionally balanced menus. This resource should also be a means for children and young people to learn more about good nutrition.

School lunches

■ The foods and drinks on offer in schools should be restricted to those which will make a positive contribution to the nutrient needs of children and young people in line with the recommendations in this report.

■ Schools should increase the uptake of free school meals by investing in cashless school meal payment systems ('smart' cards) that remove any stigma attached to free school meals.

■ Where the school provides a packed lunch as its school lunch choice – for example, where there is no kitchen or hot meal provision – the packed lunch offered should meet the nutrient-based standards for school lunches given on pages 10-19.

■ Schools should provide guidance to parents on appropriate packed lunches. A packed lunch should contain:

- a starchy food such as bread
- a meat, fish or alternative, such as cheese or egg, and
- at least one portion of fruit and one portion of vegetables.

Soft drinks, confectionery, high-fat, high-salt and high-sugar foods should be restricted in packed lunches.

■ Schools should aim to make the dining rooms for children and young people pleasant spaces which encourage them to remain on the school premises.

Breakfast clubs

■ Schools which offer breakfast clubs should only offer choices which meet the nutrient-based standards for breakfast given in this report.

Tuck shops and vending machines

■ Schools should ensure that all food and drink sold in tuck shops and vending machines fits into the whole-school food policy. Restrictions should be placed on sales of foods and drinks that are high in fat, sugar or salt.

Drinks

■ Children and young people should be encouraged to drink water, and free, fresh, chilled water should be widely available in all schools. Schools may wish to allow children and young people to carry their own water bottles throughout the day and should provide facilities for them to refill their bottles.

■ Milk is an excellent source of nutrients, particularly calcium. Semi-skimmed or skimmed milk can be encouraged as a drink between meals and schools should be encouraged to look at innovative ways to offer milk to children and young people in schools.

■ Free school milk should be considered as an option by local authorities.

After-school care

■ After-school clubs should ensure that the food and drink they provide meet the nutrient-based standards given in this report.

All-day food provision

■ Where children receive the majority of their food and drink in school – including at breakfast club, school lunch and in after-school care – there should be coordination and partnership working between providers in order to ensure that the food and drinks provided over the whole day meet the nutrient-based standards.

Vegetarianism

■ Schools should ensure that the needs of those on vegetarian diets are adequately and appropriately met and that vegetarian options are as varied as possible. Food provided for children and young people who eat only vegetarian menu options should meet the nutrient-based standards.

Special diets

■ Foods that meet the needs of those with special dietary requirements should be on offer.

Food for all

■ Foods that are appropriate to the cultural and religious needs of the school population should be on offer.

Influencing choice among children and young people through marketing and education

■ Appropriate marketing and presentation of food to make it attractive to children and young people are essential.

■ Pricing policies and organisation of the food service should encourage the uptake of healthier options.

■ The weekly menu should be prominently displayed in schools. Software allowing children and young people to look at menus and compare their choices with the standards in this report should be developed.

■ Advertising the school meal service to parents and children is an important part of the marketing strategy.

■ Partnership working between those involved in classroom education and those providing food in schools is important to ensure that food offered in schools is consistent with and reinforces classroom messages about eating well.

Monitoring school meal provision

■ Communication between children and young people and caterers about food in schools is essential. Asking children and young people their views on food and food-related issues should be a compulsory part of the feedback mechanism for monitoring the standards.

■ Regular monitoring of school meals provision is essential and should be included in all contracts.

■ Caterers, local education authorities and the Department for Education and Skills should cooperate to develop a set of tools, including menu planning software, to facilitate the monitoring of standards for school meals.

■ Governing bodies and school boards should require an annual report on the provision and uptake of school meals and other food made available in schools.

Promoting activity and healthy body weight

■ Schools have a primary role in facilitating physical activity among children and young people. Physical activity can enhance quality of life and self-esteem, help children and young people avoid becoming overweight and, for underweight children and young people, stimulate appetite.

■ Schools should promote healthy body weight and body image among children and young people by providing an environment in which they have the opportunity to eat healthy food and where the play and exercise they enjoy are actively enabled and encouraged.

■ Schools should have clear policies about bullying related to body size and shape, and should be sensitive to this among children who are overweight.

Linking food and nutrition into the whole-school environment

■ Every school should adopt and implement a whole-school food policy which covers both the teaching of nutrition and the provision of food within the school environment throughout the day, including breakfast, breaks, lunch and after-school provision.

■ Governing bodies should nominate an individual governor with responsibility for food in schools and for the implementation and monitoring of the whole-school food policy.

■ Schools should not advertise branded food and drink products on school premises, school equipment or on books and should ensure that any collaborations with business do not require endorsement of brands or specific company products.

■ Children and young people should have the opportunity to give their opinions and take an active part in decision-making about school food through school councils or school nutrition action groups.

■ The national curriculum should ensure that all young people receive adequate and consistent information about eating well and a chance to learn practical cooking skills, up to the age of 16 years.

■ Schools should ensure that all young people acquire knowledge, skills and practical experience in food and nutrition during their school career, so that they are better able to eat well when they become independent.

■ Children and young people should be encouraged to grow food and visit farmers, suppliers and manufacturers in order to improve their understanding of the connections between food, health and the environment.

The role of school staff

■ Schools and all the staff within them should be aware that they act as important sources of information and advice and as influential role models for children and young people. Staff should provide a positive role model for children and young people, for example in the snacks and drinks they choose for themselves, and in their own attitudes to food and eating and to the importance of physical activity.

■ School staff should sit with children and young people at mealtimes, choose from the same food selection as them, and encourage appropriate social skills at table, to help young people develop confidence in eating with other people.

■ All school and catering staff should be aware of the needs of different cultural groups, and of the needs of individual children and young people.

■ School staff who are concerned that a child or young person is not growing adequately or not eating during school time should inform the school nurse.

Appendix
Dietary reference values and derived amounts for nutrients

Tables 12 and 13 show the dietary reference values and derived amounts for nutrients per day which were used as the basis for calculating the nutrient-based standards in Tables 1-11[8].

TABLE 12: Dietary reference values and derived amounts for nutrients per day: BOYS

TABLE 12

	Dietary reference value (DRV)		4-6 years	7-10 years	11-14 years	15-18 years
Energy	EAR	kcals	1,715	1,970	2,220	2,755
Fat	DRV: average 35% of food energy*	g	66.7	76.6	86.3	107.1
Saturated fat	DRV: average 11% of food energy*	g	21.0	24.1	27.1	33.7
Total carbohydrate	DRV: average 50% of food energy*	g	228.7	262.7	296.0	367.3
Non-milk extrinsic sugars	DRV: average 11% of food energy*	g	50.3	57.8	65.1	80.8
Fibre	Proportion of DRV for adults (18g)/CRV**	g	13.7	15.8	17.8	22.1
Protein	RNI	g	19.7	28.3	42.1	55.2
Iron	RNI	mg	6.1	8.7	11.3	11.3
Zinc	RNI	mg	6.5	7.0	9.0	9.5
Calcium	RNI	mg	450	550	1,000	1,000
Vitamin A	RNI	µg	500	500	600	700
Vitamin C	RNI	mg	30	30	35	40
Folate	RNI	µg	100	150	200	200
Sodium	SACN recommendation	mg	1,177	1,961	2,353	2,353

* As there is no absolute requirement for sugars or fats (except essential fatty acids), these values represent a maximum.

** The dietary reference value for non-starch polysaccharides (fibre) is 18g for adults, and children should eat proportionately less, based on their lower body size. For pragmatic reasons, this has been calculated for these guidelines as a percentage of the energy recommendation, to give the Calculated Reference Value. The calculated NSP guideline is 8g per 1,000 kcal.

EAR = Estimated Average Requirement
RNI = Reference Nutrient Intake
SACN = Scientific Advisory Committee on Nutrition[11]
For an explanation of EAR and RNI, see page 10.

Energy values

Energy values calculated from the amount of fat, carbohydrate and protein in this table will not equal total energy EAR for two reasons. Firstly, the protein values here are based on the RNI, which is equivalent to protein providing about 8% of food energy whereas in typical British diets protein provides about 15% of food energy. This was accounted for in the estimates of % food energy from fat and carbohydrate when these figures were estimated by the Department of Health in 1991[8]. Secondly, the carbohydrate DRV (excluding that for NMES) is a minimum figure and intakes may be greater than this and therefore contribute higher calorie intakes.

TABLE 13: Dietary reference values and derived amounts for nutrients per day: GIRLS

	Dietary reference value (DRV)		4-6 years	7-10 years	11-14 years	15-18 years
Energy	EAR	kcals	1,545	1,740	1,845	2,110
Fat	DRV: average 35% of food energy*	g	60.1	67.7	71.8	82.1
Saturated fat	DRV: average 11% of food energy*	g	18.9	21.3	22.6	25.8
Total carbohydrate	DRV: average 50% of food energy*	g	206.0	232.0	246.0	281.3
Non-milk extrinsic sugars	DRV: average 11% of food energy*	g	45.3	51.0	54.1	61.9
Fibre	Proportion of DRV for adults (18g)/CRV**	g	12.4	14.0	14.8	16.9
Protein	RNI	g	19.7	28.3	41.2	45.0
Iron	RNI	mg	6.1	8.7	14.8	14.8
Zinc	RNI	mg	6.5	7.0	9.0	7.0
Calcium	RNI	mg	450	550	800	800
Vitamin A	RNI	µg	500	500	600	600
Vitamin C	RNI	mg	30	30	35	40
Folate	RNI	µg	100	150	200	200
Sodium	SACN recommendation	mg	1,177	1,961	2,353	2,353

* As there is no absolute requirement for sugars or fats (except essential fatty acids), these values represent a maximum.

** The dietary reference value for non-starch polysaccharides (fibre) is 18g for adults, and children should eat proportionately less, based on their lower body size. For pragmatic reasons, this has been calculated for these guidelines as a percentage of the energy recommendation, to give the Calculated Reference Value. The calculated NSP guideline is 8g per 1,000 kcal.

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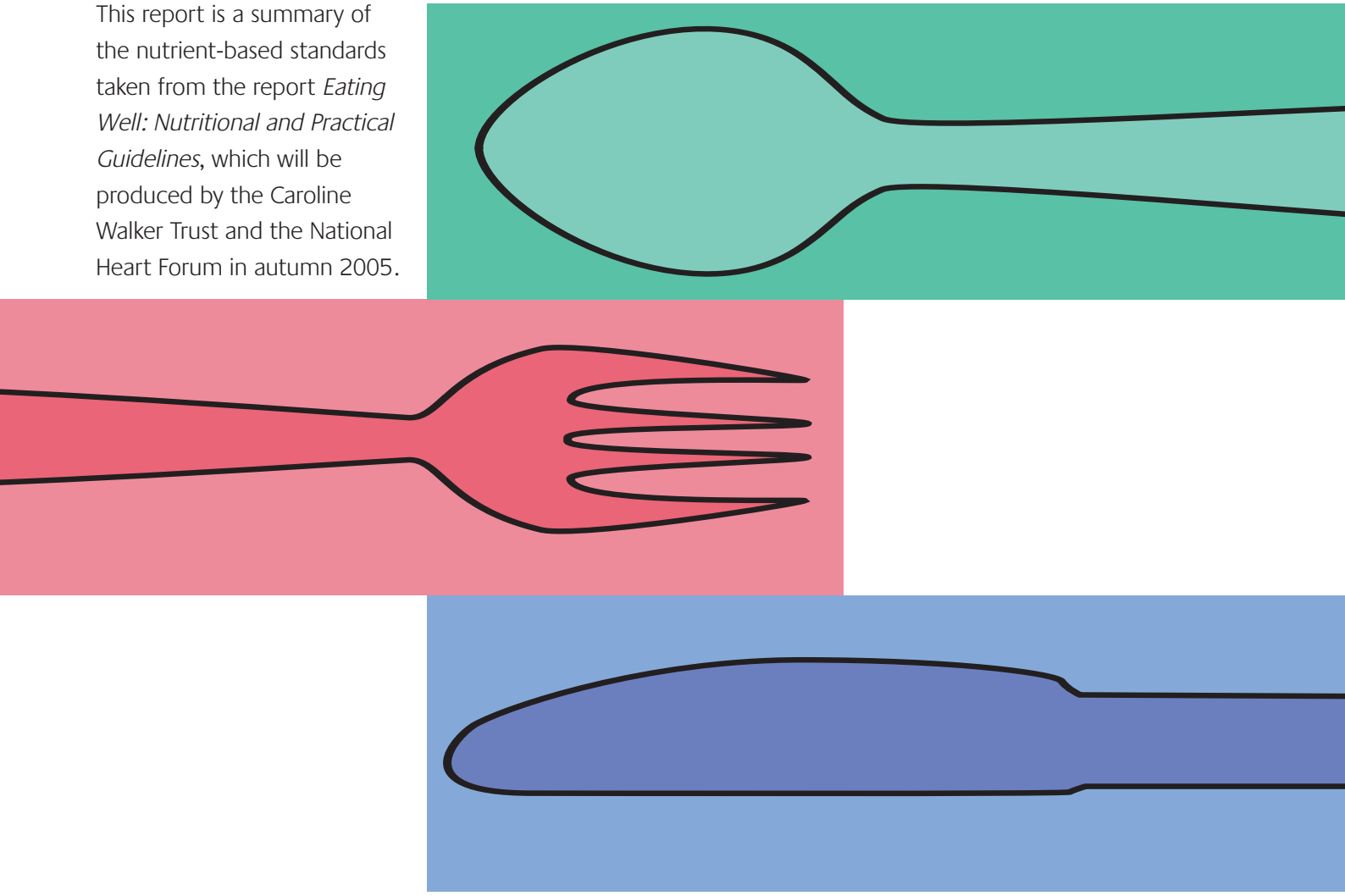
This report is a summary of the nutrient-based standards taken from the report *Eating Well: Nutritional and Practical Guidelines*, which will be produced by the Caroline Walker Trust and the National Heart Forum in autumn 2005.



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