

## Nutritional standards for children's menus at Great Ormond Street Hospital (GOSH)

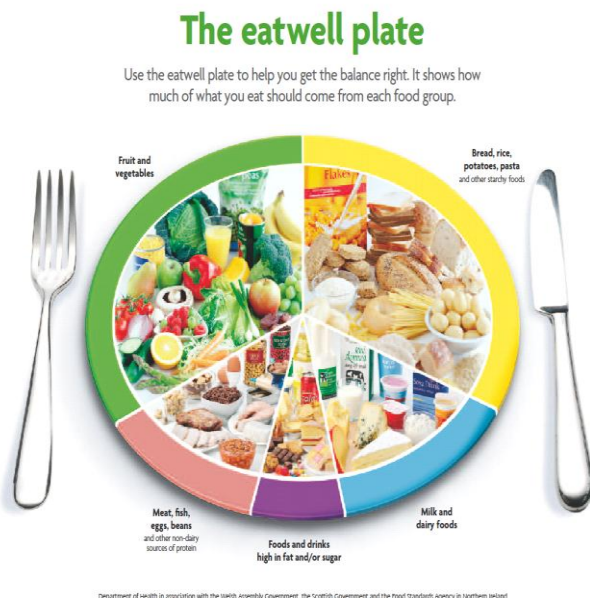
### Objectives

To ensure that all children and young people admitted to GOSH:

1. are able to eat a well balanced diet of healthy food, as outlined in national guidelines
2. have available sufficient food of good quality to meet their nutritional requirements

### Recommendations

- Good eating habits can be encouraged by the hospital menu, and by the availability of healthy snacks, including good quality fresh fruit and drinks, including water (Ref 1). The Department of Health's **eatwell plate** (Ref 2) shows the five food groups and the balance to aim for throughout the day. The main points being:



Eat plenty of bread, cereal and potatoes.

Eat at least 5 portions of fruit and vegetables a day.

Eat moderate amounts of meat, fish and alternatives.

Aim for at least two portions of fish a week, including a portion of oily fish.

Eat or drink moderate amounts of milk and dairy foods.

Eat smaller amounts of foods containing fats and sugar.

Choose options that are lower in salt when you can.

Adults should have no more than 6 grams of salt a day.

Maximum amount of salt recommended per day is 2g for 1-3 yr olds, 3g for 4-6 yr olds, 5g for 7-14 yr olds (3).

- The eatwell plate does not include references to frequency of serving or recommended portion sizes, other than in relation to fruit and vegetables and fish. It doesn't apply to children under the age of two because they have different nutritional needs.
- Between the ages of two and five, children should gradually move towards eating the same foods as the rest of the family, in the proportions shown on the eatwell plate.
- For hospitalised children and young people, the relative proportions of the food groups on the plate may not be appropriate (as they may have a greater reliance on energy dense foods and snacks - high in fat and/or sugar).
- Healthy eating recommendations for those aged over five years are:
  - total fat should not provide more than 35% of dietary energy (Ref 4,5)
  - saturated fat should not provide more than 11% of dietary energy (Ref 4,5)
  - non-milk extrinsic sugars should provide no more than 11% food energy (Ref 5).
- To provide a balanced diet, including all the main food groups, Table 1 indicates the type of foods that need to be available on the GOSH menu.

<b>Table 1 Food groups and recommended servings (Ref 6)</b>					
Food Group	Foods included	Main nutrients supplied	Recommendations		
			Infants 6-12 months (Ref 7)	Toddlers and preschoolers 1-4 years	School children 5-18 years
1.Bread, other cereals and potatoes	Bread, chapatti, breakfast cereals, rice, couscous, pasta, millet, potatoes, yam, and foods made with flour such as pizza bases, buns, pancakes	Carbohydrate  B vitamins  Fibre  Some iron, zinc and calcium	3-4 servings a day	Serve at each meal and some snacks	Serve at each meal and some snacks
2.Fruit and vegetables	Fresh, frozen, tinned and dried fruits and vegetables. Also pure fruit juices	Vitamin C Phytochemicals Fibre Carotenes	3-4 servings a day	Offer at each meal and aim for about 5 small servings a day	Aim for 5 servings a day
3.Milk, cheese and yoghurt	Breast milk, infant formulas, follow-on milks, cow's milk, yoghurts, cheese, calcium enriched soya milks, tofu	Calcium  Protein  Iodine  Riboflavin	Demand feeds of breast milk or infant formula as main drink (about 500-600ml/day). Some yoghurt and cheese	3 servings a day <u>1 serving</u> = <ul style="list-style-type: none"> <li>120ml milk in a beaker or cup</li> <li>1 pot yoghurt or fromage frais</li> <li>a serving of cheese in a sandwich or on a pizza</li> <li>a milk based pudding</li> <li>a serving of tofu</li> </ul>	3 servings a day <u>1 serving</u> = <ul style="list-style-type: none"> <li>1 glass milk 150-250ml</li> <li>1 pot yoghurt or fromage frais</li> <li>a serving of cheese in a sandwich or on a pizza</li> <li>a milk based pudding</li> <li>a serving of tofu</li> </ul>

The focus of nutritional provision from hospital food should be on achievement of an adequate energy intake. An average day's intake from breakfast, two main meals, 2-3 snacks and milk (or a suitable alternative), should meet the Estimated Average Requirements (EAR). See Table 2 for suggested meal pattern and detailed portion sizes for different age groups which should cover nutritional requirements.

<b>Table 2 Food portion size for different age groups (Ref 6)</b>				
	1 year	2-3 years	3-5 years	10 years
Meal pattern	3 small meals 3 snacks plus milk	3 meals 2-3 snacks or milky drinks	3 meals 1-2 snacks or milky drinks	3 meals 1-2 snacks or milky drinks
Meat, fish, egg	½-1 tablespoon (15-25g) minced/ finely chopped, with gravy/sauce; ½-1 hard cooked egg	1½ tablespoons (20-30g) chopped; 1 fish finger; 1 sausage; 1 egg	2-3 tablespoons (40-80g) 1-2 fish fingers/sausages; 1 egg	90-120g; 3-4 fish fingers /sausages; 2 eggs
Cheese	20g grated	25-30g cubed or grated	30-40g	50-60g
Potato	1 tablespoon (30g) mashed	1-2 tablespoons (30-60g); 6 smallish chips	2-3 tablespoons (60-80g); 8-10 chips	4-6 tablespoons (100-180g); 100-150g chips
Vegetables	1 tablespoon (30g) soft or mashed	1-2 tablespoons (30-60g) or small chopped salad	2-3 tablespoons (60-80g)	3-4 tablespoons (100-120g)
Fruit	½-1 piece (40-80g)	1 piece (80-100g)	1 piece (100g)	1 piece (100g)
Dessert (eg custard, yoghurt)	2 tablespoons (60g)	2-3 tablespoons (60-80g)	4 tablespoons (120g);	6 tablespoons (180g) 1 carton yoghurt (150g)
Bread	½-1 slice (20-30g)	1 large slice (40g)	1-2 large slices (40-80g)	2-4 large slices (80-160g)
Breakfast cereal	1 tablespoon (15g); ½ Weetabix	1-1½ tablespoons (15-20g; 1 Weetabix	2-3 tablespoons (20-30g); 1 Weetabix	3-4 tablespoons (30-40g); 2 Weetabix
Drinks	¾ teacup (100ml)	1 teacup (150ml)	1 teacup (150ml)	1 mug (200ml)
Milk	500ml whole milk/day	350ml whole or semi skimmed/day	350ml whole or skimmed/day	350ml whole, semi skimmed or skimmed/day
For children in all age groups: 6-8 drinks per day including milk drinks				

## **Food provision at GOSH**

The Ward Kitchen Management policy (Ref 8) recommends the following:

- Patient breakfasts, lunches and suppers are served on the ward each day.
- A standard breakfast can consist of a range of cereals, brown or white bread/toast with butter and condiments, orange juice, and milk, water or a hot drink.
- Main meal patient choice sheets are checked to make sure they include:
  - one main course
  - one or two vegetables
  - one potato dish
  - one pudding

The Trust has the following objectives for patient meals.

- to have a range of fruit and vegetables available to reinforce the '5 a day' national initiative
- the ability to choose fish at least three times a week.
- to keep salt content in production at national recognised guidelines
- no salt sachets being available at ward level

## **Nutrient provision at GOSH**

The UK Department of Health's Dietary Reference Values (Ref 5) can be used as a guideline for nutritional requirements, although it must be remembered that these are applicable for healthy groups of children and may not necessarily be appropriate for individual sick children.

There are no specific guidelines on the energy and nutrients that each hospital meal should make to the total nutritional intake of a child. However, based on the work of the Expert Working Group involved in producing standards for school meals "*Eating Well in School*" (Ref 9), the following may be extrapolated for children and young people aged 5-18 yrs.

Table 3	Breakfast	Lunch	Snacks and drinks	Supper
Energy % EAR	20%	30%	20%	30%
Fat, saturated fat, total carbohydrate, non- milk extrinsic sugars % food energy	20%	30%	20%	30%
Protein %RNI	20%	30%	20%	30%
Iron, zinc, calcium, vitamin A, vitamin C, folate* %RNI	20%	35%	10%	35%
Sodium % SACN recommendations (3)	20%	30%	20%	30%
Fruit & vegetable portions**	1	2	-	2
Oily fish	Once per week			
* percentages have been adjusted from the original publication which relates to school meals, and divided equally between the two main hospital meals				
** Could be taken as snacks or at main meals				

The following table suggests Nutrient Based Standards for hospital meals at GOSH derived from the Dietary Reference Values (Ref 5), SACN targets (Ref 3) and Table 3.

<b>Table 4 Suggested aim for provision of nutrients from a main hospital meal</b>					
<b>Age</b>		<b>4-6yrs</b> Boys (girls)	<b>7-10yrs</b> Boys (girls)	<b>11-14 yrs</b> Boys (girls)	<b>15-18 yrs</b> Boys (girls)
<b>Energy (kcal)</b>		515 (465)	590 (520)	665 (555)	825 (635)
<b>Fat (g)</b>	Maximum	20 (18)	23 (20)	26 (21)	32 (25)
<b>Saturated fat (g)</b>	Maximum	6	7 (6)	8 (7)	10 (8)
<b>Non-milk extrinsic sugars (g)</b>	Maximum	4	5 (4)	5	7 (5)
<b>Protein (g)</b>	Minimum	5.9	8.5	12.6 ( 12.4)	16.6 (13.6)
<b>Iron (mg)</b>	Minimum	2.1	3.0	4.0 (5.2)	4.0 (5.2)
<b>Zinc (mg)</b>	Minimum	2.3	2.5	3.2	3.3 (2.5)
<b>Calcium (mg)</b>	Minimum	158	193	350 (280)	350 (280)
<b>Vitamin C (mg)</b>	Minimum	10	10	12	14
<b>Sodium (mg)</b>	Maximum	360	600	720	720

- The NHS document Better Hospital Food (Ref 10) suggests that the main emphasis should be on assessing whether the hospital meals provide adequate energy, as protein requirements are nearly always met when the energy requirements are achieved.
- Analysis of main meals should include: energy, total fat, saturated fat, non-milk extrinsic sugars, protein, iron, zinc, calcium, vitamin C, sodium (salt). If these nutrients meet the suggested aims shown in Table 4, then the meals are likely to be adequate in other nutrients.
- Analysis of non-milk extrinsic sugar provision from main meals may not be helpful, as sugar may be a useful source of energy in hospitalised children who have increased energy requirements and/or reduced appetite. Similarly, sick children may need a higher fat intake than healthy children in the community.
- Full nutritional adequacy and hydration can only be met by offering three main meals, snacks and drinks. Patient and parental food choices from the menu will influence the nutritional adequacy of the individual child's diet.
- Younger children (<4yrs) may obtain more of their nutrition spread across frequent meals and snacks and drinks. The above guidelines cannot be used for this age group.

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