

SACC – Nutritional Guidelines for recipe analysis

Recommendations in the form of 'nutrient-based standards' are made for the amount of energy and nutrients and some foods that should be provided for children aged under 5 who receive meals and snack in child care. The Caroline Walker Trust (CWT) have devised these guidelines.

Children have different needs depending on their age and gender and it is important to remember that requirements of every child will be different. These recommendations therefore represent average intakes. The recommendations are based on percentages of the total daily intake of nutrients required by the 'average' child. Children spend different periods of time at the Children's Centre and the CWT recommendations reflect this:

- 3-5 year olds in full-day or half-day care
- 3-5 year olds that have individual meals and snacks at the Centre
- <3 year olds in full-day or half-day care
- <3 year olds that have individual meals and snacks at the Centre

All nutritional analysis were calculated according to the nutrient-based standards for food preparation. See table 1.

The CWT guidelines have been used to analyse the menus over a 5-day period utilising the categories detailed above.

Table 1: Nutrient-based standards for food prepared for 1-4 YEAR OLDS in child care: SUMMARY OF RECOMMENDATIONS

Nutrient		Full day care	Morning Snack & lunch	Afternoon Snack & Tea	Snack only	Lunch only	Tea only	
Energy % of the EAR		70%	40%	30%	10%	30%	20%	
Fat % of food energy		About 35%	About 35%	About 35%	About 35%	About 35%	About 35%	
Total carbohydrate % of food energy		About 50%	About 50%	About 50%	About 50%	About 50%	About 50%	
NMES % of food energy	MAX	11%	11%	11%	11%	11%	11%	
Protein % of food RNI	MIN	70%	40%	30%	10%	30%	20%	
Iron % of the RNI	MIN	80%	45%	35%	10%	35%	25%	
Zinc % of the RNI	MIN	80%	45%	35%	10%	35%	25%	
Calcium % of the RNI	MIN	70%	40%	30%	10%	30%	20%	
Vitamin A % of the RNI	MIN	70%	40%	30%	10%	30%	20%	
Vitamin C % of the RNI	MIN	70%	40%	30%	10%	30%	20%	
Sodium/salt % of the SACN target avg	MAX	70%	40%	30%	10%	30%	20%	
Fruit and vegetables		Aim to offer 4-5 different types	During the day carers should offer children 4-5 different types of fruits and vegetables at meals and snacks.					

Although all meals must contain optimal nutrition according to the nutrient-based standards, analysis should be interpreted over the average of 5 days and not necessarily only by single days.

Children in full day care:

Full-day care includes a morning snack, lunch, afternoon snack and tea. It does not include breakfast. Therefore children receive the majority of their food whilst in childcare and therefore meals should:

- Provide at least 70% of their daily requirements for energy
- Contribute no more than 70% of added sugar and salt requirements
- Provide 80% of their requirements for iron and zinc

The remaining 30% of daily requirements should come from breakfast, snacks, drinks and light meals at home.

Children in half-day care:

Half-day care involves either a morning or afternoon session and includes one meal and one snack.

For **lunch and a snack** the children should receive 40% of their daily needs for most nutrients

No more than 40% of added sugar and salt requirements

At least 45% of their requirements for iron and zinc

For **tea and a snack** the children should receive 30% of their requirements for most nutrients

Not less than 35% for iron and zinc

Snack only

Children in care for a morning or afternoon session which does not include a meal should receive a snack during this session if the period of care exceeds 2 hours.

Snacks should comprise of 10% of the total energy requirements.

Table 2: Results of menu analysis for 3-4 year olds and comparison to Caroline Walker Trust nutrient based standards

Nutrient		Caroline Walker Trust Standards				Menu analysis—nutritional results		
		FULL-DAY CARE	Morning session: SNACK and LUNCH	Afternoon session: SNACK and TEA	Full Day Care	½ day snack & lunch	½ day snack & tea	
Energy		kcal	1,036	592	444	950	423	527
Fat		g	40.3	23.0	17.3	39.8	14.7	25.0
Total carbohydrate		g	138.1	78.9	59.2	104.9	51.1	53.8
Non-milk extrinsic sugars	MAX	g	30.3	17.3	13.0	See page x for full explanation		
Protein	MIN	g	11.9	6.8	5.1	36.8	19.9	16.9
Iron	MIN	g	5.3	3.0	2.3	4.9	2.35	2.55
Zinc	MIN	mg	4.6	2.6	2.0	4.39	2.34	2.05
Calcium	MIN	mg	280	160	120	460	187	2.74
Vitamin A	MIN	µg	315	180	135	1035	307	728
Vitamin C	MIN	mg	21	12	9	49	33	17
Sodium	MAX	mg	700	400	300	890	365	525
Salt	MAX	g	1.75	1.0	0.75	2.2	0.9	1.3
Fruit and vegetables			Aim to offer 4-5 different types			Average daily intake = 298g Or the equivalent of 5 portions For full Day Care		

Table 3: Nutrient-based standards for food prepared for 1-2 YEAR OLDS in child care

Nutrient		FULL-DAY CARE	Morning session: SNACK & LUNCH	Afternoon session: SNACK & TEA	SNACK only	LUNCH only	TEA only
Energy	kcal	770	440	330	110	330	220
Fat	g	30	17.1	12.8	4.3	12.8	8.5
Total carbohydrate	g	102.7	58.7	44.0	14.7	44.0	29.3
Non-milk extrinsic sugars	MAX g	22.6	12.9	9.7	3.2	9.7	6.5
Protein	MIN g	10.2	5.9	4.4	1.5	4.4	2.9
Iron	MIN g	5.5	3.1	2.4	0.7	2.4	1.7
Zinc	MIN mg	4.0	2.3	1.8	0.5	1.8	1.3
Calcium	MIN mg	245	140	105	35	105	70
Vitamin A	MIN µg	280	160	120	40	120	80
Vitamin C	MIN mg	21	12	9	3	9	6
Sodium	MAX mg	560	320	240	80	240	160
Salt	MAX g	1.4	0.8	0.6	0.2	0.6	0.4
Fruit & vegetables	Aim to offer 4-5 different types	During the day carers should offer children 4-5 different types of fruits and vegetables at meals and snacks.					
Drinking water should be available throughout the day.							

Table 4: Nutrient-based standards for food prepared for 3-4 YEAR OLDS in child care

Nutrient		FULL-DAY CARE	Morning session: SNACK & LUNCH	Afternoon session: SNACK & TEA	SNACK only	LUNCH only	TEA only
Energy	kcal	1,036	592	444	148	444	296
Fat	g	40.3	23.0	17.3	5.7	17.3	11.6
Total carbohydrate	g	138.1	78.9	59.2	19.7	59.2	39.5
Non-milk extrinsic sugars	MAX g	30.3	17.3	13.0	4.3	13.0	8.7
Protein	MIN g	11.9	6.8	5.1	1.7	5.1	3.4
Iron	MIN g	5.3	3.0	2.3	0.7	2.3	1.6
Zinc	MIN mg	4.6	2.6	2.0	0.6	2.0	1.4
Calcium	MIN mg	280	160	120	40	120	80
Vitamin A	MIN µg	315	180	135	45	135	90
Vitamin C	MIN mg	21	12	9	3	9	6
Sodium	MAX mg	700	400	300	100	300	200
Salt	MAX g	1.75	1.0	0.75	0.25	0.75	0.5
Fruit & vegetables	Aim to offer 4-5 different types	During the day carers should offer children 4-5 different types of fruits and vegetables at meals and snacks.					
Drinking water should be available throughout the day.							

Table 5: Dietary Reference Values for Energy and Nutrients for Under-5s

Nutrient		1-2 year olds	3-4 year olds
Energy	kcal	1100	1480
	MJ	4.6	6.2
Total fat	g	42.8	57.6
Carbohydrate	g	146.7	197.3
Non-milk extrinsic sugars (NMES)	g	32.3	43.4
Protein	g	14.5	17.1
Iron	mg	6.9	6.5
Zinc	mg	5.0	5.8
Calcium	mg	350	400
Vitamin A	µg	400	450
Vitamin C	mg	30	30
Sodium	mg	800	1000
Salt	g	2	2.5

These guidelines were developed by [redacted] and have been adopted by [redacted]. The CWT have used these guidelines along with [redacted] to formulate the guidance they have produce for 1-5 year olds in care.

A special note about sugar

Not all sugar is created equal and some types of sugar have a greater health effect than others. In particular increasing the risk of tooth decay in children.

The natural sugars that are present in plain milk and plain yogurt or locked up in whole fruits and vegetables are not as dangerous for teeth as:

- Table sugar, honey, syrups, jam (and foods that contain them)
- Dried fruit, stewed/pureed fruit in syrup or juice, fruit juice and smoothies

These 'dangerous' sugars are called non-milk extrinsic sugars (NMES) and the CWT give specific guidance on levels in meals for children.

However, NMES cannot be measured by conventional analytical techniques as they are chemically and physiologically indistinguishable from other sugars. This distinction is also not possible when using analysis from databases based on UK food tables e.g. McCance and Widdowson.

Buss *et al.* (1994) points out the criteria used by the National Diet and Nutrition Surveys to estimate NMES:

Foods for which 100% of the total sugar content is NMES:

All sugar in fruit juice, table sugar, honey, sucrose, glucose, glucose syrup, sugar added to jam, stewed fruit in syrup or juice

Food for which ~50% of the total sugar is NMES

Canned, stewed or dried fruits

Foods which are not considered to contain NMES

Fresh, whole fruit; milk, vegetables, plain yogurt and Fromage frais

Based on the criteria described by Buss *et al.* (1994) we have estimated the likely average daily intake of NMES by taking a sample week and dividing the result by 5.

- 1) All the likely contributors to NMES were identified. This included fruit yogurt, puddings, savoury dishes known to have added sugar or honey, and sweet snacks.
- 2) The total sugar content for each dish / food was identified. The proportion of the sugar that was likely to be NMES was estimated based on the guidelines above.
- 3) A figure for total NMES for one week was calculated. This was divided by 5 to give an average daily figure.

The average daily intake of NMES from this menu is 21g. This is well below the guidelines set by CWT of 30.3g for children in full-day care.

See table 6 overleaf for details of the calculation above

Table 6: Foods contributing to NMES intake in week 2

The total sugar content of the food or dish was obtained from standard nutritional tables (McCance and Widdowson 6th edn.) and the NMES content was estimated based on the guidelines by Buss *et al.* (1994)

Dish or food	Total sugar grams	Estimated NMES grams
Ginger biscuit	3.4	3.4
Banana bread	20.2	15
Fruit Yogurt	19.8	10
Oat and sultana cookie	5.6	4.4
Sweet and sour chicken	19.2	7
Peach melba	14.8	7.1
Rice pudding with prune and apricots	8.8	4.4
Scotch pancake	6.3	6.3
Rice krispies squares	8.4	7.7
Jamaican pineapple and raisin pudding	16	12.9
½ Scone and jam	7.6	6.1
Pear and apple crumble with Fromage frais	17.5	11
Fruit yogurt	19.8	10
TOTAL for 1 week	167.4	105.3
TOTAL for 1 day	33.48	21.06