



# Nutrient Profiling Technical Guidance

*January 2011*

<b>Title</b>	<b>Nutrient Profiling Technical Guidance</b>
Author	Department of Health
Publication Date	01 Jan 2011
Document Purpose	For Information
Target Audience	Food manufacturers, retailers and advertisers
Description	The guidelines set out in this document have been produced to assist food manufacturers, retailers and advertisers to correctly calculate nutrient profiling scores for their products. This document aims to answer questions about the application of the model to different types of products.
Superseded Docs	Nutrient Profiling Technical Guidance April 2009 (FSA)
Contact Details	Obesity Team Department of Health 7th floor, South Wing, Wellington House 133-155 Waterloo Road SE1 8UG

© Crown copyright Year 2011

Published to DH website, in electronic PDF format only.

<http://www.dh.gov.uk/publications>

# Contents

The Nutrient Profiling Model.....	4
1. Application of the Agency’s Nutrient Profiling Model.....	5
2. How to Calculate Scores for the Fruit, Vegetable and Nut Content of Food and Drink .....	7
3. Frequently Asked Questions .....	10
4. Worked Examples .....	14

# Nutrient Profiling Technical Guidance

The guidelines set out in this document have been produced to assist food manufacturers, retailers and advertisers to correctly calculate nutrient profiling scores for their products.

This document aims to answer the frequently asked questions about the application of the model to different types of products through a simple guide, Q&A section and worked examples.

## The Nutrient Profiling Model

The nutrient profiling model was developed by the Food Standards Agency (FSA) in 2004-2005 to provide Ofcom, the broadcast regulator, with a tool to differentiate of foods on the basis of their nutritional composition, in the context of television advertising foods to children.

The model uses a simple scoring system where points are allocated on the basis of the nutrient content of 100g of a food or drink. Points are awarded for 'A' nutrients (energy, saturated fat, total sugar and sodium), and for 'C' nutrients (fruit, vegetables and nut content, fibre and protein). The score for 'C' nutrients is then subtracted from the score for 'A' nutrients to give the final nutrient profile score.

Foods scoring 4 or more points, and drinks scoring 1 or more points, are classified as 'less healthy' and are subject to Ofcom's controls on the advertising of foods to children on TV.

The model applies equally to all food and drink; there are no exemptions or category-specific criteria.

## 1. Application of the Agency's Nutrient Profiling Model

There are 3 steps to working out the overall score of a food or drink.

### 1. Work out total 'A' points

A maximum of ten points can be awarded for each nutrient.

Total 'A' points = (points for energy) + (points for saturated fat) + (points for sugars) + (points for sodium)

The following table indicates the points scored, depending on the amount of each nutrient in 100g of the food or drink:

Points	Energy (kJ)	Sat Fat (g)	Total Sugar (g)	Sodium (mg)
0	≤ 335	≤ 1	≤ 4.5	≤ 90
1	>335	>1	>4.5	>90
2	>670	>2	>9	>180
3	>1005	>3	>13.5	>270
4	>1340	>4	>18	>360
5	>1675	>5	>22.5	>450
6	>2010	>6	>27	>540
7	>2345	>7	>31	>630
8	>2680	>8	>36	>720
9	>3015	>9	>40	>810
10	>3350	>10	>45	>900

If a food or drink scores 11 or more 'A' points then it cannot score points for protein unless it also scores 5 points for fruit, vegetables and nuts.

### 2. Work out total 'C' points

A maximum of five points can be awarded for each nutrient/food component.

Total 'C' points = (points for % fruit, vegetable & nut content) + (points for fibre [either NSP or AOAC]) + (points for protein)

The following table indicates the points scored, depending on the amount of each nutrient/food component in 100g of the food or drink:

Points	Fruit, Veg & Nuts (%)	NSP Fibre ' (g)	Or AOAC Fibre ' (g)	Protein (g)
0	≤ 40	≤ 0.7	≤ 0.9	≤ 1.6
1	>40	>0.7	>0.9	>1.6
2	>60	>1.4	>1.9	>3.2
3	-	>2.1	>2.8	>4.8
4	-	>2.8	>3.7	>6.4
5*	>80	>3.5	>4.7	>8.0

### 3. Work out overall score

- If a food scores less than 11 'A' points then the overall score is calculated as follows:

Total 'A' points (energy + saturated fat + sugars + sodium)

Minus

Total 'C' points (fruit, veg and nuts + fibre + protein)

- If a food scores 11 or more 'A' points but scores 5 points for fruit, vegetables and nuts then the overall score is calculated as follows:

Total 'A' points (energy + saturated fat + sugars + sodium)

Minus

Total 'C' points (fruit, veg and nuts + fibre + protein)

- If a food scores 11 or more 'A' points, and less than 5 points for fruit, vegetables and nuts, then the overall score is calculated as follows :

Total 'A' points (energy + saturated fat + sugars + sodium)

Minus

Points for fibre + points for fruit, vegetables and nuts (not allowed to score for protein)

A **food** is classified as 'less healthy' where it scores **4 points or more**.  
A **drink** is classified as 'less healthy' where it scores **1 point or more**.

## 2. How to Calculate Scores for the Fruit, Vegetable and Nut Content of Food and Drink

This section provides guidance on how to calculate the fruit, vegetable and nut content of a product, for the purpose of calculating a nutrient profiling score. More detailed information can be found at:

<http://www.food.gov.uk/multimedia/pdfs/nutprofpguide.pdf>

### Definition of Fruit and Vegetables

The definition for the 5 A DAY programme should be used for fruit and vegetables. Potatoes and other starchy vegetables such as yams do not count.

### What Counts and What Doesn't

The beneficial effects of fruits and vegetables are associated with the whole product, rather than components extracted from it. For this reason only intact fruit and vegetables (including those that are cooked and dried) and those that are minimally processed (peeled, sliced, tinned, frozen, juices\* and purees) can be included when calculating a score.

Fruit and vegetables that have been subject to further processing (e.g. concentrated fruit juice sugars, powders or leathers) do **not** count.

\*see section on fruit juice below.

### Definition of 'Nuts' for the Purpose of Calculating a Nutrient Profiling Score

All nuts (including peanuts) are included in the definition of 'nuts'.

In the case of coconut, the following apply:

- Fresh coconut flesh should be scored as fruit;
- The water in the centre of the coconut should be scored as fruit juice;
- The juice squeezed from the flesh (coconut milk) should be scored as fruit juice;
- Desiccated and dried block coconut should be scored as dried fruit (see section on dried and pureed fruit and vegetables);
- Coconut which is processed beyond the original product being juiced or dried should not be included.

Seeds, except those commonly regarded as nuts (e.g. brazil nuts, cashew nuts), are not included.

### Dried and Pureed Fruit and Vegetables

Smaller amounts of dried fruits and vegetables are equivalent to one standard portion of fresh fruit or vegetables. Therefore when calculating a score, the weight of dried fruit and vegetables should be multiplied by 2 (see worked example 5).

This principle should also be applied to commercially prepared concentrated tomato puree.

## Fruit Juice

100% fruit juice, whether freshly squeezed or made from concentrate, is regarded as minimally processed. It should count for the purposes of calculating a score (see worked example 6).

To score points for fruit and vegetables, the portion of the product composed of fruit juice must be 100% fruit juice (whether freshly squeezed or made from concentrate). The amount of points scored for fruit, vegetables and nuts depends on the percentage of 100% fruit juice in the product:

- Where a product is 100% fruit juice it would score 5 points for fruit, vegetables and nuts.
- A product that is 84% juice (juice is 100% fruit juice from concentrate) would score 5 for fruit, vegetables and nuts as it has a content of >80% fruit juice.
- A product that is 56% juice (where juice is 100% juice from concentrate) would only score 1 point (see scoring system below).
- Fruit juice products containing 40% or less fruit juice (where juice is 100% fruit juice from concentrate or otherwise) are not eligible to score points (see worked example 6).

***Concentrated fruit juice sugars, powders or leathers should not count for the purpose of calculating a score.***

## Scoring system

Points	Fruit, vegetables and nut content
0	≤ 40%
1	> 40%
2	> 60%
3	-
4	-
5	> 80%

## Calculating Score Before or After Cooking

The amount of fruit and vegetables in a product can be calculated before or after cooking. However, when calculating the amount in a composite food, all the ingredients should be in the same state (either raw or cooked).



### Calculation

The amount (%) of fruit, vegetables or nuts in 100g of a product is calculated as follows:

$$\frac{(\text{Weight of f,v\&n}) + (2 \times \text{weight of dried f,v\&n}^*)}{(\text{weight of f,v\&n}) + (2 \times \text{weight of dried f,v\&n}) + (\text{weight of other ingredient})} \times 100$$

### Key

f = fruit

v = vegetables

n = nuts

\*dried fruit, vegetables and nuts includes tomato puree.

### 3. Frequently Asked Questions

This section is intended to answer the various questions that have been raised by stakeholders regarding the application of the nutrient profiling model to various food types. If you can not find the information you require you should contact DH directly.

#### Questions

- a. Should I use NSP or AOAC fibre values to calculate a nutrient profiling score?
- b. How do I calculate a nutrient profile score for a product consumed in quantities less than 100 grams (g)?
- c. How do I calculate a nutrient profile score for breakfast cereals?
- d. How do I calculate a nutrient profile score for a product which is measured by volume, e.g. ice cream, which is usually measured in millilitres (ml's)?
- e. Should I calculate nutrient profile scores for products as sold or as consumed?
- f. How do I calculate a nutrient profile score for drinks which need to be reconstituted (e.g. squash, milkshake powder or syrup, hot chocolate powder, cocoa powder, malted milk powder)?
- g. How do I calculate a nutrient profile score for powdered or ready-made soups?
- h. How do I calculate a nutrient profile score for dried pasta, noodles or dried rice products?
- i. How do I calculate a nutrient profile score for milk?
- j. How do I calculate a nutrient profile score for yogurt drinks?
- k. What should I do if my product is reformulated after submitting my nutrition profile certificate to Clearcast?

## Answers

### a. Should I use NSP or AOAC fibre values to calculate a nutrient profile score?

The nutrient profiling model was developed using UK recommendations for NSP fibre intake, as measured using the Englyst method. The nutrient profiling score should therefore be calculated using the NSP fibre value, where this is known. Where the NSP value is not known, AOAC fibre values can be used.

#### Scoring system

Points	NSP(g)	AOAC(g)
0	≤ 0.7	≤ 0.9
1	> 0.7	> 0.9
2	> 1.4	> 1.9
3	> 2.1	> 2.8
4	> 2.8	> 3.7
5	> 3.5	> 4.7

### b. How do I calculate a nutrient profile score for a product consumed in quantities less than 100 grams (g)?

The nutrient profile score is always calculated per 100g, irrespective of the amount of product which is consumed (see worked example 1). Amounts of nutrients must be multiplied up to the amount in the product per 100g.

### c. How do I calculate a nutrient profile score for breakfast cereals?

The nutrient profile score for breakfast cereals should be calculated on 100g of the product as sold, on a dry weight basis.

### d. How do I calculate a nutrient profile score for a product which is measured by volume, e.g. ice-cream, which is usually measured in millilitres (ml's)?

Nutrient profile scores are calculated per 100g of product. If available information is per 100ml's, this should be converted to per 100g using the appropriate specific gravity (density) of the product (see worked example 2).

### e. Should I calculate nutrient profile scores for products as sold or as consumed?

Nutrient profile scores should usually be calculated for a product as sold. In cases where a product needs to be reconstituted before it is eaten, for example custard powder, the nutrient profile score should be calculated based on 100g of the product as reconstituted according to the manufacturers instructions.

### f. How do I calculate a nutrient profile score for drinks which need to be reconstituted (e.g. squash, milkshake powder or syrup, hot chocolate powder, cocoa powder, malted milk powder)?

The nutrient profile score should be calculated based on 100g of the drink as reconstituted according to the manufacturers instructions (see worked example 3).

**g. How do I calculate a nutrient profile score for powdered or ready-made soups?**

Soups are classified as food for the purposes of the model.

If the soup is powdered, it should be reconstituted according to the manufacturer's instructions and the nutrient profile score calculated on the nutritional composition of 100g of made-up soup (see worked example 4).

If the soup is ready made, the score should be calculated based on the nutritional composition of 100g of the ready made soup.

**h. How do I calculate a nutrient profile score for dried pasta, noodles or dried rice products?**

The nutrient profile score for dried pasta, noodles, dried rice and other foods which require reconstitution prior to consumption should be calculated on the basis of the nutritional composition per 100g of the reconstituted product according to the manufacturer's instructions (see worked example 4).

**i. How do I calculate a nutrient profile score for milk?**

Nutrient profiling scores for whole, semi-skimmed and skimmed milk should be determined on the basis of the composition values provided within McCance and Widdowson's, *The Composition of Foods 2002, Sixth Summary Edition*, which take account of seasonal and geographical variability in nutritional components of milk, and represent a variety of processing treatments (pasteurised, sterilised and UHT milk varieties).

In the case of whole milk, the value for *whole milk average* should be used.

In the case of semi-skimmed milk, the value for *semi-skimmed milk average* should be used.

In the case of skimmed milk, the value for *skimmed milk average* should be used.

In the case of standardised whole milk, which has a slightly lower fat content than whole milk, where McCance and Widdowson does not give values, the whole milk average should be used adjusted for fat content.

**j. How do I calculate a nutrient profile score for drinking yogurts?**

For the purposes of nutrient profiling, a '**drinking yogurt**' is a product that meets the industry compositional standards for yogurt, with no additional liquids (e.g. milk, fruit juice or water). These products should be profiled as **foods**.

Products that consist of yogurt mixed with additional liquids are considered '**yogurt drinks**', and these should be profiled as **drinks**.

**k. What should I do if my product is reformulated after submitting my nutrition profile certificate to Clearcast?**

If, following submission of your nutrition profile certificate to Clearcast your product undergoes reformulation and the nutrient profile score changes, a revised certificate should be submitted to Clearcast for consideration.

## 4. Worked Examples

This section works through how to calculate nutrient profiling scores in various scenarios and for different types of products.

### Worked example 1: Calculating a score for a product sold in a portion size <100g

Product: Fruit fromage frais, 50g pot.  
Contains fruit puree (8%).

- Product sold in 50g servings, however NP score worked out using amounts per 100g.

	Per 50g pot	Per 100g	Score
Energy (kJ)	230	459	1
Saturated fat (g/100g)	0.9	1.8	1
Total sugar (g/100g)	6.7	13.4	2
Sodium (mg/100g)	<0.1	<0.1	0
<b>Total A points</b>	-	-	<b>4</b>
Fruit, veg, nuts (%)	8%	8%	0
AOAC fibre (g/100g)	0.3	0.6	0
Protein (g/100g)	3.5	6.5	4
<b>Total C points</b>	-	-	<b>4</b>
<b>SCORE: A-C</b>	-	-	<b>0</b>

This product scores 0 and so would not be subject to advertising restrictions.

**Worked example 2: Calculating a score for a product where nutrient information is provided in mls rather than grams**

Product: Vanilla ice-cream.

Products sold in mls should be converted to per 100g using the appropriate specific gravity (density) of the product.

- Multiply nutrition information per 100ml by 0.55\* to give nutrition information in grams.
- Calculate score using per 100g information.

	Nutrition information per 100ml ice-cream	Nutrition information per 100g ice-cream**	Score
Energy (kJ)	1347	741	2
Saturated fat (g/100g)	11.1	6.1	6
Total sugar (g/100g)	34.0	18.7	4
Sodium (mg/100g)	109.1	60	0
<b>Total A points</b>	-	-	<b>12</b>
Fruit, veg, nuts (%)	0	0	0
NSP fibre (g/100g)	0	0	0
Protein (g/100g)	6.5	3.6	0***
<b>Total C points</b>	-	-	<b>0</b>
<b>SCORE: A-C</b>	-	-	<b>12</b>

\* Specific gravity of ice-cream = 0.55, taken from: 'Food Portion Sizes' Third Ed

\*\* Nutrition information from vanilla dairy ice-cream, McCance & Widdowson's The Composition of Foods, 6<sup>th</sup> Summary Ed.

\*\*\* Product not eligible to score points for protein as it scores a total of 12 'A' points

This ice-cream scores 12 and so would be subject to advertising restrictions.

**Worked example 3: Calculating a score for a drink that requires reconstitution before consumption**

Product: Powdered milkshake (instructions for reconstitution provided on pack are 15g of powder and 200mls of semi-skimmed milk).

- A – use nutrition info for powder for 15g of product
- B – calculate weight (g) of 200ml of semi skimmed milk
- C – add together nutrient info for 15g powder and 206.8g milk together
- D – scale down from 221g (15g + 206.8g) to per 100g by dividing by 2.218

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
	15g milkshake powder	200ml x 0.034* = 206.8g semi skimmed milk	15g powder + 206.8g milk	15g powder + 206.8g milk scaled down to 100g	Score
Energy (kJ)	247	417	664	299	0
Saturated fat (g/100g)	0	2.3	2.3	1.0	0
Total sugar (g/100g)	14.7	5	19.7	8.9	1
Sodium (mg/100g)	0	91	91	41	0
<b>Total A points</b>	-	-	-	-	<b>1</b>
Fruit, veg, nuts (%)	0	0	0	0	0
AOAC fibre (g/100g)	0	0	0	0.5	0
Protein (g/100g)	0	7	7	3.2	1
<b>Total C points</b>	-	-	-	-	<b>1</b>
<b>SCORE: A-C</b>	-	-	-	-	<b>0</b>

\* Specific gravity of semi-skimmed milk = 0.034, taken from: 'Food Portion Sizes' Third Ed

This milkshake scores 0 and so would not be subject to advertising restrictions.



**Worked example 4: Calculating a score for a food that requires reconstitution before consumption**

Product: Cup soup, tomato flavour (instructions for reconstitution provided on pack are 25g of soup powder and 230ml of water).

- Use nutrition info for 25g of product
- No calculation for weight of water needed (1ml = 1g)
- Add together 25g soup powder and 230g water
- Scale down nutrition info from 255g (25g + 230g) to per 100g by dividing it by 2.55

	Per 25g soup powder and 230ml water*	Nutrition information scaled down to 100g	Score
Energy (kJ)	395	155	0
Saturated fat (g/100g)	0.9	0.4	0
Total sugar (g/100g)	9.2	3.6	0
Sodium (mg/100g)	1200	471	5
<b>Total A points</b>	-	-	<b>5</b>
Fruit, veg, nuts (%)	0	0	0
AOAC fibre (g/100g)	0.5	0.2	0
Protein (g/100g)	0.8	0.3	0
<b>Total C points</b>	-	-	<b>0</b>
<b>SCORE: A-C</b>	-	-	<b>5</b>

\* 1ml of water is equivalent to 1g hence no density calculation required

This cup soup scores 5 and so would be subject to advertising restrictions.

**Worked example 5: Calculating a score for a product containing dried fruit**

Product: Fruit and nut cereal bars.  
Contains dried fruit (30g/100g).

Using fruit, vegetables and nuts calculation (page 4) this product contains 46 % fruit, veg and nuts:

$$\frac{(\text{Weight of f,v\&n}) + (2 \times \text{weight of dried f,v\&n}^*)}{(\text{weight of f,v\&n}) + (2 \times \text{weight of dried f,v\&n}) + (\text{weight of other ingredients})} \times 100$$

- Weight of f,v&n = 0
- Weight of dried f,v&n = 30
- Weight of other ingredients 70
- Calculation:  $60 (2 \times 30) \div 130 (60 + 70) \times 100 = 46\%$

	Per 40g bar	Per 100g	Score
Energy (kJ)	602	1504	4
Saturated fat (g/100g)	0.6	1.4	1
Total sugar (g/100g)	14.3	35.7	7
Sodium (mg/100g)	0	0	0
<b>Total A points</b>	-	-	<b>12</b>
Fruit, veg, nuts (%)	46%	46%	1
AOAC fibre (g/100g)	1.9	4.8	5
Protein (g/100g)	1.7	4.3	0*
<b>Total C points</b>	-	-	<b>6</b>
<b>SCORE: A-C</b>	-	-	<b>6</b>

\* Product not eligible to score points for protein as it scores a total of 12 'A' points

This cereal bar scores 6 and so would be subject to advertising restrictions.

**Worked example 6: Calculating a score for a fruit juice drink**

Product: Raspberry and cranberry juice drink.  
Contains cranberry juice from concentrate (10%) and raspberry juice from concentrate (5%).

	Per 100ml	Per 100g*	Score
Energy (kJ)	177	184	0
Saturated fat (g/100g)	0	0	0
Total sugar (g/100g)	9.9	10.3	2
Sodium (mg/100g)	0	0	0
<b>Total A points</b>	-	-	<b>2</b>
Fruit, veg, nuts (%)	15%	15%	0
AOAC fibre (g/100g)	0	0	0
Protein (g/100g)	0.1	0.1	0
<b>Total C points</b>	-	-	<b>0</b>
<b>SCORE: A-C</b>	-	-	<b>2</b>

\*Specific gravity of mixed fruit juice drink 1.04

This fruit juice drink scores 2 and so would be subject to advertising restrictions.