The application of an experimental food label applied to food served in the selected secondary schools in Greater London and its influence on adolescent food choice

Tucker, Joanne (2022) The application of an experimental food label applied to food served in the selected secondary schools in Greater London and its influence on adolescent food choice. Doctoral thesis, University of West London.

Appendices for: The Application of an Experimental Food Label Applied to Food Served in the Selected Secondary Schools in Greater London and its influence on Adolescent Food Choice.

Appendices A to O

Joanne Tucker

March 2022

Appendix A

The Nordic Keyhole Food Label

The Nordic Keyhole Food label (ND) Öhrvik and Lagestrand (2018)

https://ec.europa.eu/food/system/files/2018-04/comm_ahac_20180423_pres2.pdf

Appendix B

The Guiding Stars Food label

One Star means **good** nutritional value.

Two Stars, **better** nutritional value.

Three Stars, **best** nutritional value.

The Guiding Stars Food Label (2021) What is Guiding Stars. https://guidingstars.com/

Appendix C

The PRISMA diagram to indicate the systematic search for the papers who used a food label in a live setting

Methods for Review

1 *Data Sources and Search Strategies*. An advanced search using EBSCOhost (selecting Academic Search Elite, Child Development and Adolescent Studies, CINAHL, Hospitality and Tourism Complete and MEDLINE), advanced PubMed and Cochrane ENTRAL were selected. Search terms included *Nutrition Information, food choice,* and *school* as well as filters for human subjects, English articles and published between January 1990 and January 2017.

1.2 *Inclusion Criteria.*

The population were adolescents of both genders. Adolescents are defined as "young people between the ages of 10 and 19 years" (WHO, ND). The intervention was any study that applied any form of nutritional information in a "real world" setting to actual food purchased. Studies had to compare if there is a difference in sales (meals) pre and post the nutritional intervention. The outcome to be measured is a change in any of the nutrients from the nutrition facts panel such as calories consumed, total fat or saturated fat, total sugars or NMES sugars or sodium or a change in portions of fruits and vegetables selected or consumed.

The search identified 178 potential articles to review. With duplicates removed 139. All abstracts were reviewed to meet the criteria resulting in two studies. In both of these studies both reference lists were evaluated resulting in one further study to include. Total to review are thee studies. Figure 1 outlines the flow of the study inclusion process. A summary of the findings are outlined in Table 1.

EBSCOhost: Key word: nutritional information, food choice, School, Limits: English language, Human between January 1990 and January 2017

Number of papers:

Embase 5,

Medline 4

CINAHL: 0

N=9

74 titles in total to review, duplicates removed = 58

Remove 13 further duplicated (in the 58) = 45

Review 45 titles and abstracts to match inclusion criteria

1 study
1 additional study
found in the
reference list

PubMed: Key word: nutritional information, food choice, School, Limits: English language, Human between January 1990 and January 2017

98 titles in total to review

Remove 9 duplicates found in EBSCOhost

Review 89 titles and abstracts to match inclusion criteria

1 Study
The same additional study as above was found in the reference list

Cochrane: Key word: nutritional information, food choice, School,

6 studies in total to review

Remove 1 duplicate

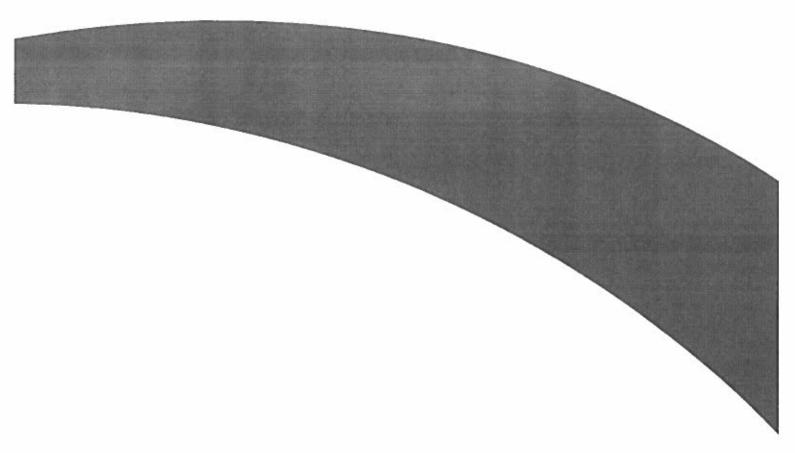Review 5 titles and abstracts to match inclusion criteria

Full details of the studies are in Table 1

Table 1.
Selected studies for the review

	Hunsberger et al., 2015	Rainville et al., 2010	Conklin et al., 2005
Objective	To investigate the impact of point-of- purchases (POP) on calorie information.	To evaluate if providing nutritional information at POP affects entrée choices.	To determine if high school students changed their food choices based upon nutritional information posted at the point of selection.
Methods Intervention/ Measurement	Mixed methods Quantitative: to measure gross calories served per student. Pre and post calorie and fat labels (paired t-test) on the same menu. Qualitative: to measure student views on menu labelling	Mixed methods Quantitative: posting of NI pre and post calories and fat per entrée sold Qualitative: 1 Focus groups To evaluate if providing NI will affect food choice.	Quantitative Entrée food choices pre and post
Setting	Madras Oregon USA One low-income rural middle public school Total 1 school	6 regions USA Total 20 schools 9 interventions 11 controls	Pennsylvania USA Rural, suburban, and urban Total 6 high schools 2 controls 4 interventions
Age and number	Grades 6-8 aged 11-14 n=531	Grades 9-12 14-18 years	Grades 9-12 14-18 years
Season & Duration	January baseline February intervention 17 school days in each month	September & October baseline January & February intervention 1508 menu days across 20 schools	Fall 6-week menu cycle total 12 weeks study
Results	t-test Decrease of 47 calories /day per student (95% CI) Fat intake decreased by 2.1g/day	Control group schools offered entrees with fewer calories, less fat and more choices. The intervention schools found an increase in calories and fat.	ANOVA Suggests that students choose healthier food choices towards healthier options. The differences were slight to moderate. The number of servings of pepperoni pizza significant (p<0.05) cheese pizza increased (p<0.05) Students seemed most affected by calories and fat grams.

Appendix D

The Technical Guidance for the OfCom Score Process

Nutrient Profiling Technical Guidance

January 2011

Title	**Nutrient Profiling Technical Guidance**
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

Contents

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.

4

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.

<u>Scoring system</u>

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:

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

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).

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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 <u>NP score worked out using amounts per 100g.</u>

	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
Total A points	-	-	**4**
Fruit, veg, nuts (%)	8%	8%	0
AOAC fibre (g/100g)	0.3	0.6	0
Protein (g/100g)	3.5	6.5	4
Total C points	-	-	**4**
SCORE: A-C	-	-	**0**

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
Total A points	-	-	**12**
Fruit, veg, nuts (%)	0	0	0
NSP fibre (g/100g)	0	0	0
Protein (g/100g)	6.5	3.6	0***
Total C points	-	-	**0**
SCORE: A-C	-	-	**12**

* 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, 6th 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

	A	B	C	D	
	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
Total A points	-	-	-	-	1
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
Total C points	-	-	-	-	1
SCORE: A-C	-	-	-	-	0

* 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 diving 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
Total A points	-	-	**5**
Fruit, veg, nuts (%)	0	0	0
AOAC fibre (g/100g)	0.5	0.2	0
Protein (g/100g)	0.8	0.3	0
Total C points	-	-	**0**
SCORE: A-C	-	-	**5**

* 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:

$$\frac{(Weight\ of\ f,v\&n) + (2\ x\ weight\ of\ dried\ f,v\&n^*)}{(weight\ of\ f,v\&n) + (2\ x\ weight\ of\ dried\ f,v\&n) + (weight\ of\ other\ ingredie} \ X\ 100$$

- Weight of f,v&n = 0
- Weight of dried f,v&n = 30
- Weight of other ingredients 70
- Calcultation: 60 (2 x 30) ÷ 130 (60 + 70) x 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
Total A points	-	-	**12**
Fruit, veg, nuts (%)	46%	46%	1
AOAC fibre (g/100g)	1.9	4.8	5
Protein (g/100g)	1.7	4.3	0*
Total C points	-	-	**6**
SCORE: A-C	-	-	**6**

* 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
Total A points	-	-	**2**
Fruit, veg, nuts (%)	15%	15%	0
AOAC fibre (g/100g)	0	0	0
Protein (g/100g)	0.1	0.1	0
Total C points	-	-	**0**
SCORE: A-C	-	-	**2**

*Specific gravity of mixed fruit juice drink 1.04

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

Appendix E

The UK Eatwell Guide

Eatwell Guide | PHE School Zone

Appendix F

Nutritional Information on the Back of Pack of a Food Label in the UK

Back of Pack food labels UK British Nutrition Foundation British Nutrition Foundation - British Nutrition Foundation

Appendix G

Traffic Light Food Label (UK)

Each serving (150g) contains

Energy 1046kJ 250kcal	Fat 3.0g LOW	Saturates 1.3g LOW	Sugars 34g HIGH	Salt 0.9g MED
13%	4%	7%	38%	15%

of an adult's reference intake
Typical values (as sold) per 100g: 697kJ/ 167kcal

The Traffic light food label, that includes the Reference Intake (RI) below.

The British Nutrition Foundation (2016)

https://www.nutrition.org.uk/healthyliving/helpingyoueatwell/324-labels.html?start=3

Appendix H

Definition of High, Medium and Low for Nutrients on the Traffic Light Food Label

Text	LOW	MEDIUM	HIGH	
Colour code	Green	Amber	Red	
Fat	≤ 3.0g/100g	> 3.0g to ≤ 17.5g/100g	> 17.5g/100g	> 21g/portion
Saturates	≤ 1.5g/100g	> 1.5g to ≤ 5.0g/100g	> 5.0g/100g	> 6.0g/portion
(Total) Sugars	≤ 5.0g/100g	> 5.0g and ≤ 22.5g /100g	> 22.5g/100g	> 27g/portion
Salt	≤ 0.3g/100g	> 0.3g to ≤ 1.5g/100g	>1.5g/100g	>1.8g/portion

The Traffic light food label. The British Nutrition Foundation (2016)

https://www.nutrition.org.uk/healthyliving/helpingyoueatwell/labels.html?start=3

Appendix I

Reference Daily Intake Guideline (UK)

Energy or Nutrient	Reference Intake
Energy	8400kJ/2000kcal
Fat	70g
Saturates	20g
Carbohydrate	260g
Sugars	90g*
Protein	50g
Salt	6g

The RI for the day. The British Nutrition Foundation (2016)

https://www.nutrition.org.uk/healthyliving/helpingyoueatwell/labels.html?limit=1&start=4)

Appendix J

Healthy Choices Food Label (Netherlands)

Dutch choices Logo. Available at: healthy choice symbol - Google Search

Appendix K

Smart Choices (Manufacturers)

Smart Choices Logo Available at:

Appendix L

Nutri-Score Food Label (France)

Nutri-Score (2019) What is the Nutri-Score?

https://nutriscore.colruytgroup.com/colruytgroup/en/about-nutri-score/

Appendix M

Pre (M1) and Post (M2) Intervention Focus Group Semi Structured Guides

M1 Semi Structured Questionnaire for focus groups <u>PRE INTERVENTION : SCHOOL THREE</u>

A Food choice at school

Introduction to Focus Group Participants
Hello everyone!
Thank you for meeting with me today. My name is Jo Tucker. As you know, we are going to ask you all some questions about the food you chose at school. We are not here to find out anything personal about you, just about your experiences. Please feel free to say what you think. We will be voice recording the conversation so that we can remember what was said. We will not reveal your name or personal details, just what was said. This session will last for about 45 minutes. Do you have any questions before we go on to some ground rules?

Voice recorder on

Ground Rules
Before we begin, we need to set some rules so that everyone gets to join in. As we are using a voice recorder, we need to be able to hear everyone properly. Therefore, when one person is talking, everyone else will listen. If you want to say something, please just hold it until the other person has finished speaking, and then tell us your views.
As everyone will be giving their own views, we might not all agree. However, we will respect each other's comments by listening to one another.
Please don't use each other's name when we are recording, please call people by their selected number and letter they have selected shown in front of them.
We will try and give everyone in the group an opportunity to join in the discussions.
What is said within the group remains in the group.
If you don't want to answer just lift your hand and we will not ask you
Do you have any questions?

Focus Group Questions

1. What time of day do you most prefer to eat here at school and why?
    Breakfast
    Mid-morning
    Lunch

2. I have given you some headings can you put them in order of what affects your food choice the most? What do you have you as your top three?

FOR ME
1. Taste - go to Q 3
2. Nutrition
3. Price - go to Q4
4. Hunger - go to Q5
5. Time - go to Q7
6. Convenience - go to Q8
7. Culture
8. Fiends – go to Q10

3. Taste and sensory perception - Let's talk about taste and texture – what does "taste good" on this menu mean to you? Give me some examples of foods that taste good.

Are there foods that <u>do not</u> taste good? What are these foods and what is it that does not make them taste good?

What foods look good to you that make you want to choose them and why do you think they look good? Which foods do you not like the look of and why don't you like these?

4. Price - how much do you spend for lunch and does this affect your choices?

5. Hunger - What foods do you choose when you are really hungry at school? Do you always choose these when you are hungry? If you were not hungry, what would you choose instead and why would you choose these?

6. Gender - Do you think genders eat differently at school and if so, what do you think boys eat more of and what do girls eat more of? Why do you think this is so?

7. Time – does the time you are allowed to eat affect which meals you select? How would you change this?

8. Studies suggest that your ages like handheld food. Why do you like convenience foods? Would you eat with a knife and fork? Why / why not?

9. Meal patterns - Do you miss (not take) meals at school and if you do miss them why do you miss them? How does it make you feel?

10. Peers - Do you feel that your friends influence what you eat? Why / why not? Do you feel it is important to fit in with your friends and not be seen to eat differently? Why /why not? If you only choose healthy foods would your friends make fun of you? Why

Thank you for your time in answering my questions
Is there anything you would like to add about your reasons for selecting your food your sources and interest in health, the influence of family and friends and your use in reading a food label?

M2 Semi Structured Questionnaire for focus groups <u>POST INTERVENTION</u>

A Food choice at school

Introduction to Focus Group Participants
Hello everyone! Thank you for meeting with me again today. Just to refresh you my name is Jo
Tucker. As you know, we are going to ask you all some questions about the food you chose at school.
We are not here to find out anything personal about you, just about your experiences. Please feel
free to say what you think. We will be voice recording the conversation so that we can remember
what was said. We will not reveal your name or personal details, just what was said. This session will
last for about 45 minutes. Do you have any questions before we go on to some ground rules?

Voice recorder on

Ground Rules
Before we begin, we need to set some rules so that everyone gets to join in. As we are using a voice
recorder, we need to be able to hear everyone properly. Therefore, when one person is talking,
everyone else will listen. If you want to say something, hold it until the other person has finished
speaking, then speak.
As everyone will be giving their own views, we might not all agree. However, we will respect each
other's comments by listening to one another.
Please don't use each other's name when we are recording, please call people by their three
numbers and letters they have selected shown on labels you have all been given.
We will try and give everyone in the group an opportunity to join in the discussions.
What is said within the group remains in the group.
Any questions?

Focus Group Questions

1. Awareness phase

Did you receive the post cards from your tutors?
Did you see the posters?
Did you see the food scores?
Did you understand them?
Did it affect your food choices?

2. Hand out the sheet with different food labels
   Let's talk about food labels (SHOW pictures) we have on packaged foods in supermarkets –
   do you use these labels (why /why not) would you like to see this label on food offered in
   cafeterias/ restaurants? Why / why not

   If you do think a restaurant cafeteria should have a food label (bearing in mind a cafeteria has
   to be fast as people queue so a lot of information would slow you down) what do you think
   the label should have on it? WHY do you think this will affect choice?

3. Would you be interested in designing your own food label will this affect your food choices
   Why/Why not

4. Health and nutrition – What is healthy eating?

What do you think of when I say junk food and are there any junk food choices at school? Is eating junk food normal to you and your friends?

The government suggest that we should eat 5 portions of fruits and vegetables a day – How many portions do you eat? - How can we get adolescents to select fruit and vegetables at school?

Knowledge - Where do you get your nutritional information from? Do you feel that you know much about nutrition? What or who has the biggest impact on what you choose to eat?

Give stats on each school's nutritional answers

Where do you get your knowledge on :-

Protein

Salt

Fats

Salt

Fibre

What foods keep you full / Why?

Makes you feel good / Why?

Keeps you awake / Why?

Thank you for your time in answering my questions

Is there anything you would like to add about your reasons for selecting your food?

Appendix N

Time Plan for each School's Intervention

Phases of the Research			School One, Two and Three	School Four	Dates to implement experiment
Week No.	2017	Menu Number	Weeks		
1	04 September	Menu 1			Not included staggered start.
2	11 September	Menu 2			Not included
3	18 September	Menu 3			Not included
4	25 September	Menu 1			Arrange focus group dates with each school
5	02 October	Menu 2	Pre-intervention Baseline		Start collecting baseline sales for Schools One Two and Three
6	09 October	Menu 3	Pre-intervention Baseline		Deliver Food Choice Questionnaire to be handed out in tutor time Schools One, Two and Three
7	16 October	Menu 1	Pre-intervention Baseline		Deliver – `Understand your food score` awareness packs Schools One, Two and Three
8	23 October		HALF TERM	HALF TERM	HALF TERM
9	30th October	Menu 2	Post-intervention Phase 1		Put up posters in Schools One, Two and Three Deliver food scores Schools One, Two and Three 30th is a training day some schools
10	06 November	Menu 3	Post-intervention Phase 1		
11	13 November	Menu 1	Post-intervention Phase 1		
12	20 November	Menu 2	Post-intervention Phase 2	Pre intervention Baseline	Start collecting baseline sales for School Four
13	27 November	Menu 3	Post-intervention Phase 2	Pre-intervention Baseline	Deliver Food Choice Questionnaire to be handed out in tutor time Schools Four
14	04 December	Menu 1	Post-intervention Phase 2	Pre-intervention Baseline	Deliver - `Understand your food score` awareness packs Schools Four
			FINISH Schools One, Two and Three		
15	11 December	Menu 2	Phase 1		ONLY use this to measure against any training day e.g. Monday sales if 30th is a training day use this Monday here. Schools One, Two and Three
Total					3 weeks baseline / 6 weeks intervention
	2018				School Four
16	02 Tuesday January				Not included
17	08 January				
18	15 January				
19	22 January				
20	29 January				
21	05 February			Post-intervention Phase 1	Commence intervention Know your score Put up posters School Four Deliver food scores School Four
22	12 February		HALF TERM	HALF TERM	HALF TERM
23	19 February			Post-intervention Phase 1	
24	26 February			Post-intervention Phase 1	
25	05 March			Post-intervention	Focus groups

Appendix O

Examples of School's Menus

MENU - Summer Week One

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Malaysian style Chicken Curry with Steamed Rice & Mango Chutney	Lean Beef Lasagne served with Side Salad	Pulled Roast Pork & Stuffing with Roast Potatoes & Seasonal Vegetables	Freshly made Beef or Chicken Burger served in a Bun with Wedges	Fish of the Day with Tartare Sauce, Lemon, Chips & Peas or Beans
Spinach & Chickpea Curry with Steamed Rice & Mango Chutney	Roasted Vegetable Lasagne served with Side Salad	Vegetable Fajita with Guacamole & Sour Cream	Veggie Burger served in a Bun with Wedges	Roasted Pepper, Mozzarella & Pesto Slice with Mixed Leaves
Jacket Potato with a Choice of Fillings	Jacket Potato with a Choice of Fillings	Jacket Potato with a Choice of Fillings	Jacket Potato with a Choice of Fillings	Jacket Potato with a Choice of Fillings
Pasta, Noodle or Rice Pots with freshly made Sauces	Pasta, Noodle or Rice Pots with freshly made Sauces	Pasta, Noodle or Rice Pots with freshly made Sauces	Pasta, Noodle or Rice Pots with freshly made Sauces	Pasta, Noodle or Rice Pots with freshly made Sauces
Spiced Plum Crumble with Custard Sauce	Sticky Toffee Pudding with Custard Sauce	Apple & Cinnamon Sponge with Custard Sauce	Chocolate Sponge with Chocolate Sauce	Selection of Hot or Cold Desserts

Available Daily
Mixed Salad, Jacket Potatoes, Selection of Filled Sandwiches, Baguettes, Paninis, Wraps, Salad Boxes, Shaker Pots, Fresh Fruit Pots, Dessert Pots, Yoghurt Pots and Drinks including Homemade Smoothies

MENU

- Summer Week Three

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Chicken Dhansak served with Rice & Mango Chutney	Sausage & Mash with Onion Gravy	BBQ Roast Chicken with Wedges & Side Salad	Lean Beef Chilli Nachos with Sour Cream & Cheese	Fish of the Day served with Tartare Sauce, Lemon, Chips & Peas or Bean
Vegetable Dhansak served with Rice & Mango Chutney	Veggie Sausage & Mash with Onion Gravy	Mushroom Stroganoff with Brown Rice	Spicy Bean Nachos with Sour Cream & Cheese	Vegetable Goulash with Noodles
Jacket Potato with a Choice of Fillings	Jacket Potato with a Choice of Fillings	Jacket Potato with a Choice of Fillings	Jacket Potato with a Choice of Fillings	Jacket Potato with a Choice of Fillings
Pasta, Noodle or Rice Pot with freshly made Sauces	Pasta, Noodle or Rice Pot with freshly made Sauces	Pasta, Noodle or Rice Pot with freshly made Sauces	Pasta, Noodle or Rice Pot with freshly made Sauces	Pasta, Noodle or Rice Pot with freshly made Sauces
Summer Fruits Crumble with Custard Sauce	Apple & Toffee Sponge with Custard Sauce	Warm Lemon Drizzle Cake with Sweetened Greek Yoghurt	Chocolate Sponge with Chocolate Sauce	Selection of Hot or Cold Desserts

Available Daily
Mixed Salad, Jacket Potatoes, Selection of Filled Sandwiches, Baguettes, Paninis, Wraps, Salad Boxes, Shaker Pots, Fresh Fruit Pots, Dessert Pots, Yoghurt Pots and Drinks including Homemade Smoothies

MENU
- Autumn Week Three

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Chicken Tikka Masala served with Rice & Mango Chutney	Cottage Pie Served With Fresh Broccoli	Baked Ham with Roast Potatoes & Seasonal Vegetables	Southern Fried Chicken served with Wedges & Spicy Slaw	Fish of the Day with Tartar Sauce, Lemon, Chips & Peas or Beans
Chana Dhal served with Rice & Mango Chutney	Cheese topped Bean Hot Pot	Spinach, Feta & Mushroom Tart	Roasted Pepper & Mature Cheddar Frittata with Side Salad	Fresh Vegetable & Barley Casserole
Jacket Potato with a choice of Fillings	Jacket Potato with a choice of Fillings	Jacket Potato with a choice of Fillings	Jacket Potato with a choice of Fillings	Jacket Potato with a choice of Fillings
Pasta, Noodle or Rice Pot with freshly made Sauces	Pasta, Noodle or Rice Pot with freshly made Sauces	Pasta, Noodle or Rice Pot with freshly made Sauces	Pasta, Noodle or Rice Pot with freshly made Sauces	Pasta, Noodle or Rice Pot with freshly made Sauces
Rhubarb Crumble with Custard Sauce	Apple sponge cake with Custard Sauce	Warm Lemon Drizzle Cake with Custard	Chocolate Sponge with Chocolate sauce	Selection of Hot & Cold Desserts

Available Daily
Mixed Salad, Jacket Potatoes, Selection of Filled Sandwiches, Baguettes, Paninis, Wraps, Salad Boxes, Shaker Pots, Fresh Fruit Pots, Dessert Pots, Yoghurt Pots and Drinks including Homemade Smoothies

MENU

– Summer Week Two

EST.1994

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Chicken Korma served with Rice	Freshly made Lamb Kofta served in a Salad Wrap	Baked Ham with Roast Potatoes & Seasonal Vegetables	Chinese Style Chicken Noodles with Prawn Crackers	Fish of the Day with Tartare Sauce, Lemon, Chips & Peas or Beans
Spicy Roast Squash & Lentil Curry served with Rice	Vegetable Falafel served in a Salad Wrap	Cheese & Onion Pasty with Side Salad & Chutney	Stir Fried Veggie Noodles with Sweet Chilli Sauce	Spring Onion & Feta Cheese Frittata with Side Salad
Jacket Potato with a Choice of Fillings	Jacket Potato with a Choice of Fillings	Jacket Potato with a Choice of Fillings	Jacket Potato with a Choice of Fillings	Jacket Potato with a Choice of Fillings
Pasta, Noodle or Rice Pot with freshly made Sauces	Pasta, Noodle or Rice Pot with freshly made Sauces	Pasta, Noodle or Rice Pot with freshly made Sauces	Pasta, Noodle or Rice Pot with freshly made Sauces	Pasta, Noodle or Rice Pot with freshly made Sauces
Apple Crumble with Custard Sauce	Nut free Bakewell Tart with Custard Sauce	Cherry & Vanilla Sponge with Custard Sauce	Chocolate Sponge with Chocolate Sauce	Selection of Hot or Cold Desserts

Available Daily
Mixed Salad, Jacket Potatoes, Selection of Filled Sandwiches, Baguettes, Paninis, Wraps, Salad Boxes, Shaker Pots, Fresh Fruit Pots, Dessert Pots, Yoghurt Pots and Drinks including Homemade Smoothies

WEEKLY MENU

The ██████ School - Week 3

	Monday	Tuesday	Wednesday	Thursday	Friday
	Sweet & Sour Chicken served with Noodles	Beef Burrito served with Spicy Wedges	Chicken & Leek Pie served with Oven Baked New Potato & Gravy	Jerk Chicken served with Rice & Beans	Breaded Fish & Chips served with Tartare Sauce & Lemon Sauce
	Mixed Vegetables Pasta Baked	Paprika Roast Vegetables on a Flat Bread with Feta Cheese	Quorn Sausage Toad in the Hole with Gravy	Jollof Rice	Mixed Beans Fajita
	Steamed Broccoli	Mixed Vegetables	Steamed Carrots	Sweetcorn	Baked Beans or Garden Peas
	Jacket Potato with Hot or Cold Fillings	Jacket Potato with Hot or Cold Fillings	Jacket Potato with Hot or Cold Fillings	Jacket Potato with Hot or Cold Fillings	Jacket Potato with Hot or Cold Fillings
	Pizza Slice, Pasta with Homemade Sauce	Pizza Slice, Pasta with Homemade Sauce	Pizza Slice, Pasta with Homemade Sauce	Pizza Slice, Pasta with Homemade Sauce	Pizza Slice, Pasta with Homemade Sauce
	Pineapple & Coconut Sponge served with Custard	Chocolate & Orange Cake served with Custard	Season Berry Strudel served with Custard	Peach & Raspberry Meringue	Chef's Dessert of the Day

Available daily

Salads, Sandwiches, Baguettes, Dessert Pots, Fresh Fruit

HARRISON