

## Short Communication

# Methodology for adding and amending glycaemic index values to a nutrition analysis package

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### Abstract

Since its introduction in 1981, the glycaemic index (GI) has been a useful tool for classifying the glycaemic effects of carbohydrate foods. Consumption of a low-GI diet has been associated with a reduced risk of developing CVD, diabetes mellitus and certain cancers. WISP (Tinuviel Software, Llanfechell, Anglesey, UK) is a nutrition software package used for the analysis of food intake records and 24 h recalls. Within its database, WISP contains the GI values of foods based on the International Tables 2002. The aim of the present study is to describe in detail a methodology for adding and amending GI values to the WISP database in a clinical or research setting, using data from the updated International Tables 2008.

**Key words:** Glycaemic index; Methodology; Food codes

Carbohydrate-rich foods have been classified according to their induced glycaemic response since the 1970s<sup>(1–5)</sup>. The concept of glycaemic index (GI) was introduced in 1981<sup>(6)</sup>, and GI has since been used as a tool for assessing the glycaemic responses of different carbohydrate foods.

GI is defined as ‘the incremental area under the blood glucose response curve (AUC) of a test food containing 50 g available carbohydrate, expressed as a percentage of the response to the same amount of available carbohydrate from a reference food’<sup>(6)</sup>. The gold standard method for determining the GI value of an individual food is to administer a test food containing 50 g available carbohydrate to at least ten healthy subjects and then to measure the effect on their blood glucose levels over the following 2 h. The area under the 2 h blood glucose response curve (AUC) is then calculated. On a separate day, the same subjects are given a portion of a reference food with a known GI value (i.e. glucose or white bread) containing 50 g available carbohydrate, and the AUC is calculated for this reference food. Finally, the GI of the test food is calculated for each subject by dividing the AUC of the test food by the reference AUC and multiplying by 100. The mean of

these values for each of the ten subjects is the final GI value for that particular food<sup>(6)</sup>.

The principle of GI is that foods with a low GI are digested and absorbed more slowly than foods with a high GI and, therefore, help to regulate postprandial blood glucose and insulin levels. In general, many starchy carbohydrates such as refined breads, breakfast cereals and potatoes consumed in Western countries have high GI values. These foods have a high degree of starch gelatinisation and are digested and absorbed rapidly in the body<sup>(7)</sup>. Foods with the lowest GI values include pasta, legumes, most fruits and vegetables, and dairy products<sup>(8)</sup>.

A significant limitation of GI is that it is only a qualitative measure of carbohydrate and does not take into account the effect of carbohydrate portion size on blood glycaemic and insulinaemic responses. The concept of glycaemic load (GL) was introduced in the 1990s by researchers at Harvard University to account for the quantity of carbohydrate consumed and thus described the total glycaemic effect of the diet. The GL, by definition, is the mathematical product of the GI of a food and its carbohydrate content (g) divided by 100 ( $GL = GI/100 \times \text{amount of available carbohydrate}$ )<sup>(9)</sup>.

**Abbreviations:** AUC, area under the curve; GI, glycaemic index; GL, glycaemic load.

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In recent years, strong evidence has emerged, showing that the consumption of low-GI/GL diets is associated with better glucose control in patients with diabetes mellitus<sup>(10)</sup>, greater fat loss in obese patients<sup>(11)</sup>, lower cholesterol levels<sup>(11,12)</sup> and, in general, a lower risk of developing diseases including diabetes mellitus, CVD and certain cancers<sup>(11,13,14)</sup>. However, controversy remains as to whether the GI should be promoted among the general public, and some scientists regard the GI concept as too complex for public understanding<sup>(15,16)</sup>, even though numerous international diabetes organisations fully support the use of the GI. The Australian population has had the greatest success in implementing the GI use particularly with the introduction of the GI Symbol Programme in 2002<sup>(17)</sup>. However, from the limited Irish data available, it would appear that the awareness of GI and GL among consumers in Ireland is generally lower; a survey carried out in 2005 found that only 27% of Irish adults were aware of the GI concept<sup>(18,19)</sup>.

The first 'International Tables of Glycemic Index Values' were compiled and published by Dr Brand-Miller and colleagues<sup>(20)</sup> in Sydney in 1995, and they contain measured GI values of 565 food products. These tables were updated in 2002, containing values for 750 food items<sup>(21)</sup>. The most recent tables, published in 2008, hold values for 2480 individual food items<sup>(8)</sup>. The tables published in 2008 differentiate GI values derived from studies that used diabetic subjects. Australian researchers also developed cut-off values to define low- and high-GI foods<sup>(22)</sup>.

WISP (Tinuviel Software, Llanfechell, Anglesey, UK) nutrition analysis software is widely used throughout Ireland and the UK both in nutrition research and in dietetic clinical practice for over 20 years. The nutrient database contains over 6000 food items and approximately 125 nutrients ([www.tinuvielsoftware.com](http://www.tinuvielsoftware.com)). The food composition databank is derived from McCance and Widdowson's 6th Edition of The 'Composition of Foods' – 2002. In addition, it contains the GI values of foods from the International Tables 2002<sup>(21)</sup>.

The aim of the present study is to describe in detail a method for adding and amending GI values to the WISP nutrition analysis package. Previous studies have documented comparable methods of estimating GI values for various other nutrition software packages<sup>(23–26)</sup>. However, to our knowledge, a similar method of adding and amending GI values to the WISP database has not been previously described in the literature.

## Methods

Each of the food codes in the WISP database was manually checked against the most up-to-date published GI values in the International Tables 2008 for GI and GL values. GI values were assigned to those foods in the database, which did not previously have a GI value, where a relevant value was available. Values already present were changed

if more up-to-date or relevant GI values existed in the 2008 data. In situations where values differed from those in the tables published in 2008, they were changed to the more up-to-date value. Certain food codes, which did not have an exact corresponding food in the tables, were given an estimated GI value based on a food or mean of a number of foods, considered to be the closest to the food type/description. Where possible, foods were given GI values that were derived from studies in healthy, non-diabetic subjects. However, if the only relevant value was available from studies in diabetic subjects (table 2), this value was used. In situations where a number of studies in the International Tables measured the GI of one particular food, the mean of the values was calculated and assigned to that food in the WISP database. Where available, mean GI values from studies carried out in the UK were used, as no specific GI testing has been carried out on Irish foods to date. These values were considered to be more representative of foods commonly consumed in Ireland. For each value added or changed in the database, the value considered most relevant was used. For individual foods having multiple food codes in the WISP database, the GI for each of the codes was changed in the database.

## Results

Of the 5395 food codes currently in our WISP databank, 664 (12.3%) had a new GI value assigned or amended according to the International Tables 2008. Altogether, 231 (4.3%) foods were assigned a new GI value and 433 (8%) GI values were amended. Table 1 provides a list of the 664 food codes, their original GI value and newly assigned or amended value, along with the rationale for changing the value. The food code refers to the code as assigned to each item in the WISP databank.

## Discussion

As a result of the present study, there are significantly more foods in the WISP database which have an assigned GI value. We found that 12.3% of food codes in WISP had either an old GI value or no GI value. It is interesting to note that the food groups where most amendments were made included fruits, fruit drinks, vegetables and soups, pastries and confectioneries. In addition, the GI values already assigned to foods were revised in the light of more recent GI research and changed accordingly. This will enable more accurate WISP analysis involving GI, within ongoing limitations. The changes to the GI values in the database were carried out using the most up-to-date data available. In addition, the values added or amended were made as relevant as possible to the Irish diet. GI values derived from studies involving diabetic subjects were excluded, where alternative data were available.

The methodology in the present study appears to be consistent with the small number of studies that have

**Table 1.** List of WISP food codes with old and new or revised glycaemic index (GI) values

Food code	Description	Old value	New value	Reference/rationale for changing the value*
22	White rice, easy cook, raw	58	49	UK value; food no. 532 from table 1
11042	White rice, easy cook, raw	58	49	UK value; food no. 532 from table 1
11445	White rice, easy cook, raw	58	49	UK value; food no. 532 from table 1
23	White rice, easy cook, boiled	58	49	UK value; food no. 532 from table 1
11043	White rice, easy cook, boiled	58	49	UK value; food no. 532 from table 1
11446	White rice, easy cook, boiled	58	49	UK value; food no. 532 from table 1
25	Macaroni, raw	47	50	Mean of three studies; food no. 2275 from table 2
11053	Macaroni, raw	47	50	Mean of three studies; food no. 2275 from table 2
11447	Macaroni, raw	47	50	Mean of three studies; food no. 2275 from table 2
26	Macaroni, boiled	47	50	Mean of three studies; food no. 2275 from table 2
11054	Macaroni, boiled	47	50	Mean of three studies; food no. 2275 from table 2
11448	Macaroni, boiled	47	50	Mean of three studies; food no. 2275 from table 2
27	Noodles, egg, raw	47	50	Mean of four studies; food no. 1340 from table 1
11055	Noodles, egg, raw	47	50	Mean of four studies; food no. 1340 from table 1
28	Noodles, egg, boiled	47	50	Mean of four studies; food no. 1340 from table 1
11056	Noodles, egg, boiled	47	50	Mean of four studies; food no. 1340 from table 1
11057	Noodles, fried	47	50	Mean of four studies; food no. 1340 from table 1
11058	Noodles, plain, raw	47	50	Mean of four studies; food no. 1340 from table 1
11059	Noodles, plain, boiled	47	50	Mean of four studies; food no. 1340 from table 1
29	Spaghetti, white, raw	47	49	Mean of six studies; food no. 1368 from table 1
11061	Spaghetti, white, raw	47	49	Mean of six studies; food no. 1368 from table 1
11452	Spaghetti, white, raw	47	49	Mean of six studies; food no. 1368 from table 1
30	Spaghetti, white, boiled	47	49	Mean of six studies; food no. 1368 from table 1
11062	Spaghetti, white, boiled	47	49	Mean of six studies; food no. 1368 from table 1
11453	Spaghetti, white, boiled	47	49	Mean of six studies; food no. 1368 from table 1
31	Spaghetti, wholemeal, raw	37	48	Mean of food no. 1378, 1379 and 1380 from table 1
11063	Spaghetti, wholemeal, raw	37	48	Mean of food no. 1378, 1379 and 1380 from table 1
11454	Spaghetti, wholemeal, raw	37	48	Mean of food no. 1378, 1379 and 1380 from table 1
32	Spaghetti, wholemeal, boiled	37	48	Mean of food no. 1378, 1379 and 1380 from table 1
11064	Spaghetti, wholemeal, boiled	37	48	Mean of food no. 1378, 1379 and 1380 from table 1
11455	Spaghetti, wholemeal, boiled	37	48	Mean of food no. 1378, 1379 and 1380 from table 1
42	Malt bread	48	56	Mean of UK values; no. 256 and 265 from table 1
11084	Malt bread	48	56	Mean of UK values; no. 256 and 265 from table 1
43	Naan bread	–	67	Estimate from food no. 293 and 295 from table 1
11086	Naan bread	–	67	Estimate from food no. 293 and 295 from table 1
11463	Naan bread	–	67	Estimate from food no. 293 and 295 from table 1
48	White bread, mean	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1
11099	White bread, mean	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1
49	White bread, sliced	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1
11102	White bread, sliced	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1
11468	White bread, sliced	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1
11100	White bread, large, crusty	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1
11101	White bread, large, tin	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1
11103	White bread, small, unwrapped	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1
11104	White bread, small wrapped	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1
50	White bread, fried in blended oil	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1
51	White bread, fried in lard	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1
11105	White bread, fried	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1
11469	White bread, fried in lard	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1
52	White bread, toasted	70	60	Mean of three studies; no. 188–190 from table 1
11106	White bread, toasted	70	60	Mean of three studies; no. 188–190 from table 1
11475	White bread, toasted	70	60	Mean of three studies; no. 188–190 from table 1
53	White bread, French stick	70	81	Mean of six studies; no. 1906–1911 from table 2
11107	White bread, French stick	70	81	Mean of six studies; no. 1906–1911 from table 2
11471	White bread, French stick	70	81	Mean of six studies; no. 1906–1911 from table 2
11108	White bread, Scottish batch, unwrapped	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1

Table 1. Continued

Food code	Description	Old value	New value	Reference/rationale for changing the value*
11109	White bread, Scottish batch, wrapped	70	76	Mean of six UK studies; no. 172, 175, 180, 183, 184, 187 from table 1
56	Wholemeal bread, mean	66	71	Mean of three UK studies; no. 234, 236, 239 from table 1
11113	Wholemeal bread, mean	66	71	Mean of three UK studies; no. 234, 236, 239 from table 1
11476	Wholemeal bread, mean	66	71	Mean of three UK studies; no. 234, 236, 239 from table 1
11114	Wholemeal bread, large	66	71	Mean of three UK studies; no. 234, 236, 239 from table 1
11115	Wholemeal bread, small, sliced	66	71	Mean of three UK studies; no. 234, 236, 239 from table 1
11116	Wholemeal bread, small unsliced	66	71	Mean of three UK studies; no. 234, 236, 239 from table 1
11117	Wholemeal bread, toasted	66	71	Mean of three UK studies; no. 234, 236, 239 from table 1
61	Hamburger buns	61	62	From table 1 no. 144 and 145
11121	Hamburger buns	61	62	From table 1 no. 144 and 145
11481	Hamburger buns	61	62	From table 1 no. 144 and 145
65	All-bran	39	44	Mean of four studies; no. 297–300 from table 1
11126	All-bran	39	44	Mean of four studies; no. 297–300 from table 1
11485	All-bran	39	44	Mean of four studies; no. 297–300 from table 1
66	Bran flakes	74	50	UK value; food no. 313 from table 1
11128	Bran flakes	74	50	UK value; food no. 313 from table 1
11486	Bran flakes	74	50	UK value; food no. 313 from table 1
68	Common Sense Oat Bran Flakes	–	68	Estimated mean of seventy-nine (no. 2013 from table 2) and fifty-seven (no. 447 from table 1)
69	Cornflakes	81	93	UK value; no. 325 from table 1
11130	Cornflakes	81	93	UK value; no. 325 from table 1
11490	Cornflakes	81	93	UK value; no. 325 from table 1
72	Fruit 'n' Fibre	61	65	Mean of three UK studies; no. 332–334 from table 1
11134	Fruit 'n' Fibre	61	65	Mean of three UK studies; no. 332–334 from table 1
11493	Fruit 'n' Fibre	61	65	Mean of three UK studies; no. 332–334 from table 1
74	Muesli, with no added sugar	–	55	Estimate from Alpen Original UK value; no. 355 from table 1
11139	Muesli, with no added sugar	–	55	Estimate from Alpen Original UK value; no. 355 from table 1
11495	Muesli, with no added sugar	–	55	Estimate from Alpen Original UK value; no. 355 from table 1
11138	Muesli, with extra fruit	55	67	UK value; no. 362 (muesli, fruit) from table 1
76	Porridge, made with water	58	63	Mean of three UK studies, all 63; no. 396, 397, 398 from table 1
11143	Porridge, made with water	58	63	Mean of three UK studies, all 63; no. 396, 397, 398 from table 1
11569	Porridge, made with water	58	63	Mean of three UK studies, all 63; no. 396, 397, 398 from table 1
78	Puffed wheat	54	80	From table 1 food no. 413
11144	Puffed wheat	54	80	From table 1 food no. 413
80	Ready Brek	58	79	Used value for instant porridge (mean of four studies); no. 408–411 from table 1
11145	Ready Brek	58	79	Used value for instant porridge (mean of four studies); no. 408–411 from table 1
11496	Ready Brek	58	79	Used value for instant porridge (mean of four studies); no. 408–411 from table 1
83	Shredded wheat	75	67	From table 1 no. 420 (old value used a mean of two studies, one of which was among diabetics)
11148	Shredded wheat	75	67	From table 1 no. 420 (old value used a mean of two studies, one of which was among diabetics)
11499	Shredded wheat	75	67	From table 1 no. 420 (old value used a mean of two studies, one of which was among diabetics)
84	Shreddies	75	70	Used value for Whole-wheat Goldies; no. 440 from table 1
11149	Shreddies	75	70	Used value for Whole-wheat Goldies; no. 440 from table 1
11500	Shreddies	75	70	Used value for Whole-wheat Goldies; no. 440 from table 1
89	Sultana Bran	73	76	Mean of no. 427 + 428 from table 1 and no. 2026 from table 2 (UK value)
11153	Sultana Bran	73	76	Mean of no. 427 + 428 from table 1 and no. 2026 from table 2 (UK value)
11504	Sultana Bran	73	76	Mean of no. 427 + 428 from table 1 and no. 2026 from table 2 (UK value)
90	Weetabix	74	69	Mean of seven studies; no. 435–441 from table 1
11154	Weetabix	74	69	Mean of seven studies; no. 435–441 from table 1
11505	Weetabix	74	69	Mean of seven studies; no. 435–441 from table 1
91	Weetaflakes	74	69	Mean of seven studies; no. 435–441 from table 1
11155	Weetaflakes	74	69	Mean of seven studies; no. 435–441 from table 1
92	Weetos	–	80	Used value for puffed wheat; no. 413 from table 1
11157	Weetos	–	80	Used value for puffed wheat; no. 413 from table 1
95	Crispbread, rye	64	57	Mean of six studies; no. 733, 734, 735, 736 and 737 from table 1
11168	Crispbread, rye	64	57	Mean of six studies; no. 733, 734, 735, 736 and 737 from table 1
11511	Crispbread, rye	64	57	Mean of six studies; no. 733, 734, 735, 736 and 737 from table 1

Table 1. Continued

Food code	Description	Old value	New value	Reference/rationale for changing the value*
97	Digestive biscuits, plain	59	39	Used UK value (old value was Canadian); no. 630 from table 1
11170	Digestive biscuits, plain	59	39	Used UK value (old value was Canadian); no. 630 from table 1
11513	Digestive biscuits, plain	59	39	Used UK value (old value was Canadian); no. 630 from table 1
98	Flapjacks	–	53	Mean of no. 676, 677, 678 and 641 from table 1
11171	Flapjacks	–	53	Mean of no. 676, 677, 678 and 641 from table 1
11571	Flapjacks	–	53	Mean of no. 676, 677, 678 and 641 from table 1
109	Battenburg cake	–	40	Mean of no. 3, 4, 7 and 8 from table 1
11190	Battenburg cake	–	40	Mean of no. 3, 4, 7 and 8 from table 1
11574	Battenburg cake	–	40	Mean of no. 3, 4, 7 and 8 from table 1
124	Flaky pastry, raw	59	56	Used value for puff pastry; no. 37 from table 1
11222	Flaky pastry, raw	59	56	Used value for puff pastry; no. 37 from table 1
11582	Flaky pastry, raw	59	56	Used value for puff pastry; no. 37 from table 1
125	Flaky pastry, cooked	59	56	Used value for puff pastry; no. 37 from table 1
11223	Flaky pastry, cooked	59	56	Used value for puff pastry; no. 37 from table 1
11585	Flaky pastry, cooked	59	56	Used value for puff pastry; no. 37 from table 1
11224	Puff pastry, frozen, raw	59	56	Used value for puff pastry; no. 37 from table 1
126	Shortcrust pastry, raw	59	56	Used value for puff pastry; no. 37 from table 1
11225	Shortcrust pastry, raw	59	56	Used value for puff pastry; no. 37 from table 1
126	Shortcrust pastry, cooked	59	56	Used value for puff pastry; no. 37 from table 1
11226	Shortcrust pastry, cooked	59	56	Used value for puff pastry; no. 37 from table 1
11227	Shortcrust pastry, frozen, raw	59	56	Used value for puff pastry; no. 37 from table 1
130	Chelsea buns	–	75	Used value for doughnuts; no. 13 from table 1
11232	Chelsea buns	–	75	Used value for doughnuts; no. 13 from table 1
135	Danish pastries	–	50	From table 1 no. 12
11240	Danish pastries	–	50	From table 1 no. 12
11538	Danish pastries	–	50	From table 1 no. 12
136	Doughnuts, jam	76	75	From table 1 no. 13
11242	Doughnuts, jam	76	75	From table 1 no. 13
137	Doughnuts, ring	76	75	From table 1 no. 13
11243	Doughnuts, ring	76	75	From table 1 no. 13
11539	Doughnuts, ring	76	75	From table 1 no. 13
11241	Doughnuts, custard-filled	76	75	From table 1 no. 13
11244	Doughnuts, ring, iced	76	75	From table 1 no. 13
141	Hot cross buns	–	63	Mean of fruit and spice loaf (Australia) 54 + fruit and cinnamon bread (UK) 71; no. 135 and 136 from table 1
11253	Hot cross buns	–	63	Mean of fruit and spice loaf (Australia) 54 + fruit and cinnamon bread (UK) 71; no. 135 and 136 from table 1
147	Scones, wholemeal	–	71	Mean of three UK studies for wholemeal flour; no. 234, 236, 239
11268	Scones, wholemeal	–	71	Mean of three UK studies for wholemeal flour; no. 234, 236, 239
11593	Scones, wholemeal	–	71	Mean of three UK studies for wholemeal flour; no. 234, 236, 239
148	Scotch pancakes	–	69	Used value for crumpets; no. 1885 from table 2
11270	Scotch pancakes	–	69	Used value for crumpets; no. 1885 from table 2
11544	Scotch pancakes, retail	–	69	Used value for crumpets; no. 1885 from table 2
154	Crumble, fruit	–	41	From table 1 no. 10 (apple berry crumble)
11292	Crumble, with pie filling	–	41	From table 1 no. 10 (apple berry crumble)
11293	Crumble, apple	–	41	From table 1 no. 10 (apple berry crumble)
11294	Crumble, fruit	–	41	From table 1 no. 10 (apple berry crumble)
11546	Crumble, fruit	–	41	From table 1 no. 10 (apple berry crumble)
11295	Crumble, fruit, wholemeal	–	41	From table 1 no. 10 (apple berry crumble)
11595	Crumble, fruit, wholemeal	–	41	From table 1 no. 10 (apple berry crumble)
169	Pancakes, savoury, made with whole milk	–	66	From table 1 no. 30
11604	Pancakes, savoury, made with whole milk	–	66	From table 1 no. 30
11346	Pancakes, savoury	–	66	From table 1 no. 30
170	Pizza	60	38	Used mean of three studies; no. 1222, 1223, 1224 from table 1
11349	Pizza	60	38	Used mean of three studies; no. 1222, 1223, 1224 from table 1
15252	Pizza, cheese and tomato	60	38	Used mean of three studies; no. 1222, 1223, 1224 from table 1
171	Pizza, frozen	60	38	Used mean of three studies; no. 1222, 1223, 1224 from table 1
11350	Pizza, frozen	60	38	Used mean of three studies; no. 1222, 1223, 1224 from table 1



Table 1. Continued

Food code	Description	Old value	New value	Reference/rationale for changing the value*
15254	Pizza, cheese and tomato, retail, frozen	60	38	Used mean of three studies; no. 1222, 1223, 1224 from table 1
11553	Pizza, cheese and tomato, frozen	60	38	Used mean of three studies; no. 1222, 1223, 1224 from table 1
15255	Pizza, tomato	60	38	Used mean of three studies; no. 1222, 1223, 1224 from table 1
180	Yorkshire pudding	–	66	Used value for pancakes, home-made; no. 30 from table 1
181	Skimmed milk, mean	32	31	Mean of eleven studies; no. 809–819 from table 1
12306	Skimmed milk, mean	32	31	Mean of eleven studies; no. 809–819 from table 1
182	Skimmed milk, pasteurised	32	31	Mean of eleven studies; no. 809–819 from table 1
12307	Skimmed milk, pasteurised	32	31	Mean of eleven studies; no. 809–819 from table 1
183	Skimmed milk, pasteurised, fortified plus SMP	32	31	Mean of eleven studies; no. 809–819 from table 1
184	Skimmed milk, UHT, fortified	32	31	Mean of eleven studies; no. 809–819 from table 1
12310	Skimmed milk, UHT	32	31	Mean of eleven studies; no. 809–819 from table 1
185	Semi-skimmed milk, mean	31	30	Mean of three studies; no. 795–797 from table 1
1	Semi-skimmed milk, mean	31	30	Mean of three studies; no. 795–797 from table 1
12312	Semi-skimmed milk, mean	31	30	Mean of three studies; no. 795–797 from table 1
186	Semi-skimmed milk, pasteurised	31	30	Mean of three studies; no. 795–797 from table 1
12313	Semi-skimmed milk, pasteurised	31	30	Mean of three studies; no. 795–797 from table 1
12009	Semi-skimmed milk, pasteurised, mean	31	30	Mean of three studies; no. 795–797 from table 1
187	Semi-skimmed milk, pasteurised, fortified plus SMP	31	30	Mean of three studies; no. 795–797 from table 1
12010	Semi-skimmed milk, pasteurised, fortified plus SMP	31	30	Mean of three studies; no. 795–797 from table 1
12418	Semi-skimmed milk, pasteurised, summer	31	30	Mean of three studies; no. 795–797 from table 1
12419	Semi-skimmed milk, pasteurised, winter	31	30	Mean of three studies; no. 795–797 from table 1
188	Semi-skimmed milk, UHT	31	30	Mean of three studies; no. 795–797 from table 1
12011	Semi-skimmed milk, UHT	31	30	Mean of three studies; no. 795–797 from table 1
12314	Semi-skimmed milk, UHT	31	30	Mean of three studies; no. 795–797 from table 1
189	Whole milk, mean	29	31	Mean of seven studies; no. 783–789 from table 1
12012	Whole milk, mean	29	31	Mean of seven studies; no. 783–789 from table 1
12316	Whole milk, mean	29	31	Mean of seven studies; no. 783–789 from table 1
190	Whole milk, pasteurised	29	31	Mean of seven studies; no. 783–789 from table 1
12316	Whole milk, pasteurised	29	31	Mean of seven studies; no. 783–789 from table 1
191	Whole milk, pasteurised, summer	29	31	Mean of seven studies; no. 783–789 from table 1
12014	Whole milk, pasteurised, summer	29	31	Mean of seven studies; no. 783–789 from table 1
12317	Whole milk, pasteurised, summer	29	31	Mean of seven studies; no. 783–789 from table 1
192	Whole milk, pasteurised, winter	29	31	Mean of seven studies; no. 783–789 from table 1
12015	Whole milk, pasteurised, winter	29	31	Mean of seven studies; no. 783–789 from table 1
12318	Whole milk, pasteurised, winter	29	31	Mean of seven studies; no. 783–789 from table 1
193	Whole milk, sterilised	29	31	Mean of seven studies; no. 783–789 from table 1
12017	Whole milk, sterilised	29	31	Mean of seven studies; no. 783–789 from table 1
12319	Whole milk, sterilised	29	31	Mean of seven studies; no. 783–789 from table 1
194	Channel Island milk, whole, pasteurised	29	31	Mean of seven studies; no. 783–789 from table 1
12018	Channel Island milk, whole, pasteurised	29	31	Mean of seven studies; no. 783–789 from table 1
195	Channel Island milk, whole, pasteurised, summer	29	31	Mean of seven studies; no. 783–789 from table 1
12019	Channel Island milk, whole, pasteurised, summer	29	31	Mean of seven studies; no. 783–789 from table 1
196	Channel Island milk, whole, pasteurised, winter	29	31	Mean of seven studies; no. 783–789 from table 1
12020	Channel Island milk, whole, pasteurised, winter	29	31	Mean of seven studies; no. 783–789 from table 1
197	Channel Island milk, semi-skimmed, UHT	31	30	Mean of three studies; no. 795–797 from table 1
12021	Channel Island milk, semi-skimmed, UHT	31	30	Mean of three studies; no. 795–797 from table 1
203	Flavoured milk	–	30	Mean of ten studies; no. 793, 794, 800–807 from table 1
12325	Flavoured milk, pasteurised, chocolate	–	30	Mean of ten studies; no. 793, 794, 800–807 from table 1
12326	Flavoured milk, pasteurised	–	30	Mean of ten studies; no. 793, 794, 800–807 from table 1
209	Soya milk, plain	45	34	Mean of nine studies; no. 925–933 from table 1
210	Soya milk, flavoured	45	31	Mean of two studies; no. 937 and 938 from table 1
239	Fromage frais, fruit	–	24	Mean of eight UK studies; no. 752–759 from table 1
12159	Fromage frais, fruit	–	24	Mean of eight UK studies; no. 752–759 from table 1
12370	Fromage frais, fruit	–	24	Mean of eight UK studies; no. 752–759 from table 1
240	Fromage frais, plain	–	24	Mean of eight UK studies; no. 752–759 from table 1
12158	Fromage frais, plain	–	24	Mean of eight UK studies; no. 752–759 from table 1
12369	Fromage frais, plain	–	24	Mean of eight UK studies; no. 752–759 from table 1
241	Fromage frais, very low fat	–	24	Mean of eight UK studies; no. 752–759 from table 1
12160	Fromage frais, very low fat	–	24	Mean of eight UK studies; no. 752–759 from table 1
12371	Fromage frais, virtually fat free, natural	–	24	Mean of eight UK studies; no. 752–759 from table 1
12372	Fromage frais, virtually fat free, fruit	–	24	Mean of eight UK studies; no. 752–759 from table 1
251	Drinking yogurt	38	34	Mean of six studies; no. 919–924 from table 1
255	Low-fat yogurt, plain	33	27	Mean of no. 892 and 895 from table 1

Table 1. Continued

Food code	Description	Old value	New value	Reference/rationale for changing the value*
12188	Low-fat yogurt, plain	33	27	Mean of no. 892 and 895 from table 1
12379	Low-fat yogurt, plain	33	27	Mean of no. 892 and 895 from table 1
265	Cornetto	–	55	From table 1 no. 1430
12202	Cornetto	–	55	From table 1 no. 1430
12386	Cornetto-type ice-cream cone	–	55	From table 1 no. 1430
266	Frozen ice-cream desserts	61	37	Mean of twelve full-fat and low-fat ice creams; no. 770–781 from table 1
12203	Frozen ice-cream desserts	61	37	Mean of twelve full-fat and low-fat ice creams; no. 770–781 from table 1
267	Ice cream, dairy, vanilla	61	37	Mean of twelve full-fat and low-fat ice creams; no. 770–781 from table 1
12204	Ice cream, dairy, vanilla	61	37	Mean of twelve full-fat and low-fat ice creams; no. 770–781 from table 1
12387	Ice cream, dairy, vanilla	61	37	Mean of twelve full-fat and low-fat ice creams; no. 770–781 from table 1
268	Ice cream, dairy, flavoured	61	37	Mean of twelve full-fat and low-fat ice creams; no. 770–781 from table 1
12205	Ice cream, dairy, flavoured	61	37	Mean of twelve full-fat and low-fat ice creams; no. 770–781 from table 1
274	Cheesecake, frozen	–	31	From table 1 no. 11 (mousse filling on biscuit base)
11289	Cheesecake, frozen	–	31	From table 1 no. 11 (mousse filling on biscuit base)
12219	Cheesecake, frozen	–	31	From table 1 no. 11 (mousse filling on biscuit base)
12395	Cheesecake, frozen	–	31	From table 1 no. 11 (mousse filling on biscuit base)
11288	Cheesecake	–	31	From table 1 no. 11 (mousse filling on biscuit base)
12218	Cheesecake	–	31	From table 1 no. 11 (mousse filling on biscuit base)
276	Custard, made up with whole milk	43	36	Mean of four studies; no. 745–748 from table 1
11296	Custard, made up with whole milk	43	36	Mean of four studies; no. 745–748 from table 1
12222	Custard, made up with whole milk	43	36	Mean of four studies; no. 745–748 from table 1
12412	Custard, made up with whole milk	43	36	Mean of four studies; no. 745–748 from table 1
12223	Custard, made up with semi-skimmed milk	43	36	Mean of four studies; no. 745–748 from table 1
12413	Custard, made up with semi-skimmed milk	43	36	Mean of four studies; no. 745–748 from table 1
277	Custard, made up with skimmed milk	37	36	Mean of four studies; no. 745–748 from table 1
11297	Custard, made up with skimmed milk	37	36	Mean of four studies; no. 745–748 from table 1
12224	Custard, made up with skimmed milk	37	36	Mean of four studies; no. 745–748 from table 1
278	Custard, canned	43	36	Mean of four studies; no. 745–748 from table 1
11298	Custard, canned	43	36	Mean of four studies; no. 745–748 from table 1
12225	Custard, canned	43	36	Mean of four studies; no. 745–748 from table 1
11299	Custard, confectioners	43	36	Mean of four studies; no. 745–748 from table 1
12226	Custard, confectioners	43	36	Mean of four studies; no. 745–748 from table 1
12227	Custard, egg	43	36	Mean of four studies; no. 745–748 from table 1
12399	Custard, ready to eat	43	36	Mean of four studies; no. 745–748 from table 1
282	Jelly, made with water	–	53	From table 1 no. 1431
12237	Jelly, made with water	–	53	From table 1 no. 1431
444	Chicken, breaded, fried in vegetable oil	–	46	From table 1 no. 1183 (chicken nuggets)
19121	Chicken fingers, baked	–	46	From table 1 no. 1183 (chicken nuggets)
19122	Chicken goujons, chilled/frozen, baked	–	46	From table 1 no. 1183 (chicken nuggets)
548	Chicken curry, without bone	–	26	Mean of no. 1234 and 1248 from table 1
19188	Chicken curry, chilled/frozen, reheated	–	26	Mean of no. 1234 and 1248 from table 1
19190	Chicken curry, made with canned curry sauce	–	26	Mean of no. 1234 and 1248 from table 1
19336	Chicken curry, made with canned curry sauce	–	26	Mean of no. 1234 and 1248 from table 1
549	Chicken curry, retail	–	26	Mean of no. 1234 and 1248 from table 1
550	Chicken curry, with rice	–	42	Mean of no. 1181, 1182, 1185, 1258 from table 1
19189	Chicken curry, chilled/frozen, reheated, with rice	–	42	Mean of no. 1181, 1182, 1185, 1258 from table 1
551	Chilli con carne	–	34	From table 1 no. 1187 (chilli con carne, made from haricot beans)
19206	Chilli con carne	–	34	From table 1 no. 1187 (chilli con carne, made from haricot beans)
19337	Chilli con carne	–	34	From table 1 no. 1187 (chilli con carne, made from haricot beans)
19207	Chilli con carne, canned	–	34	From table 1 no. 1187 (chilli con carne, made from haricot beans)
19208	Chilli con carne, chilled/frozen, reheated	–	34	From table 1 no. 1187 (chilli con carne, made from haricot beans)
557	Lasagne, frozen, cooked	47	34	Mean of no. 1206–1209 from table 1
19346	Lasagne	47	34	Mean of no. 1206–1209 from table 1
641	Scampi, in breadcrumbs, frozen, fried	–	38	Used value for fish fingers; no. 2246 from table 1
655	Fish pie	–	40	Used value for Cumberland fish pie (UK); no. 1195 from table 1

**Table 1.** *Continued*

Food code	Description	Old value	New value	Reference/rationale for changing the value*
16294	Fish pie	–	40	Used value for Cumberland fish pie (UK); no. 1195 from table 1
16295	Fisherman's pie, retail	–	40	Used value for Cumberland fish pie (UK); no. 1195 from table 1
660	New potatoes, mean, raw	50	76	New potatoes mean of three studies; no. 1678–1680 from table 1
661	New potatoes, boiled in unsalted water	50	76	New potatoes mean of three studies; no. 1678–1680 from table 1
662	New potatoes, in skins, boiled in unsalted water	76	76	New potatoes mean of three studies; no. 1678–1680 from table 1
13420	New potatoes, in skins, boiled in unsalted water	76	76	New potatoes mean of three studies; no. 1678–1680 from table 1
663	New potatoes, canned, reheated, drained	63	65	From table 1 no. 1656
668	Old potatoes, boiled in unsalted water	50	82	Mean of four studies; no. 1648–1651 from table 1
13421	Old potatoes, boiled in unsalted water	50	82	Mean of four studies; no. 1648–1651 from table 1
674	Chips, home-made, fried in blended oil	75	70	From table 1 no. 1659 (Irish potato, peeled, fried in vegetable oil)
675	Chips, home-made, fried in corn oil	75	70	From table 1 no. 1659 (Irish potato, peeled, fried in vegetable oil)
676	Chips, home-made, fried in dripping	75	70	From table 1 no. 1659 (Irish potato, peeled, fried in vegetable oil)
687	Oven chips, frozen baked	75	59	Mean of no. 1657 and 1658 from table 1
688	Instant potato powder, made up with water	85	87	Mean of six studies; no. 1660–1665 from table 1
689	Instant potato powder, made up with whole milk	85	87	Mean of six studies; no. 1660–1665 from table 1
694	Baked beans, canned in tomato sauce, reheated	48	46	Mean of nine studies; no. 1076–1084 from table 1 (old value used mean of two studies)
695	Baked beans, canned in tomato sauce, reduced sugar, reduced salt	–	46	Mean of nine studies; no. 1076–1084 from table 1
702	Broad beans, frozen, boiled in unsalted water	79	63	From table 1 no. 1610 (broad beans, frozen, reheated in microwave)
13064	Broad beans, raw	79	63	From table 1 no. 1610 (broad beans, frozen, reheated in microwave)
13065	Broad beans, boiled in salted water	79	63	From table 1 no. 1610 (broad beans, frozen, reheated in microwave)
13066	Broad beans, boiled in unsalted water	79	63	From table 1 no. 1610 (broad beans, frozen, reheated in microwave)
13067	Broad beans, dried, raw	79	63	From table 1 no. 1610 (broad beans, frozen, reheated in microwave)
13068	Broad beans, frozen, boiled in unsalted water	79	63	From table 1 no. 1610 (broad beans, frozen, reheated in microwave)
13069	Broad beans, canned, reheated, drained	79	63	From table 1 no. 1610 (broad beans, frozen, reheated in microwave)
703	Butter beans, canned, reheated, drained	36	32	Mean of four studies; no. 1089–1092 from table 1
706	Chick peas, canned, reheated, drained	42	38	From table 1 no. 1096
712	Lentils, red, split, dried, raw	26	21	From table 1 no. 1115
713	Lentils, red, split, dried, boiled in unsalted water	26	21	From table 1 no. 1115
716	Red kidney beans, dried, raw	28	22	Mean of four studies; no. 1102–1105 from table 1
717	Red kidney beans, dried, boiled in unsalted water	28	22	Mean of four studies; no. 1102–1105 from table 1
718	Red kidney beans, canned, reheated, drained	28	22	Mean of four studies; no. 1102–1105 from table 1
728	Mushy peas, canned, reheated	48	51	From table 1 no. 1611
729	Peas, raw	48	51	From table 1 no. 1611
730	Peas, boiled in unsalted water	48	51	From table 1 no. 1611
731	Peas, frozen, boiled in salted water	48	51	From table 1 no. 1611
13465	Peas, frozen, boiled in unsalted water	48	51	From table 1 no. 1611
732	Peas, frozen, boiled in unsalted water	48	51	From table 1 no. 1611
733	Peas, canned, reheated, drained	48	51	From table 1 no. 1611
734	Petit pois, frozen, boiled in salted water	48	51	From table 1 no. 1611
735	Petit pois, frozen, boiled in unsalted water	48	51	From table 1 no. 1611
736	Processed peas, canned, reheated, drained	48	51	From table 1 no. 1611
754	Carrots, old, raw	47	39	Mean of four studies; no. 1621–1624 from table 1
755	Carrots, old, boiled in unsalted water	47	39	Mean of four studies; no. 1621–1624 from table 1
756	Carrots, young, raw	47	39	Mean of four studies; no. 1621–1624 from table 1
757	Carrots, young, boiled in unsalted water	47	39	Mean of four studies; no. 1621–1624 from table 1
758	Carrots, canned, reheated, drained	47	39	Mean of four studies; no. 1621–1624 from table 1
799	Parsnip, raw	97	52	From table 1 no. 1626



Table 1. Continued

Food code	Description	Old value	New value	Reference/rationale for changing the value*
800	Parsnip, boiled in unsalted water	97	52	From table 1 no. 1626
807	Plantain, boiled in unsalted water	40	66	From table 1 no. 1859
808	Plantain, ripe, fried in vegetable oil	–	90	From table 1 no. 1860
809	Pumpkin, raw	75	64	Mean of three studies; no. 1613–1615 from table 1
810	Pumpkin, boiled in salted water	75	64	Mean of three studies; no. 1613–1615 from table 1
821	Sweet potato, raw	61	70	Mean of nine studies; no. 1684–1692 from table 1
13463	Sweet potato, raw	61	70	Mean of nine studies; no. 1684–1692 from table 1
822	Sweet potato, boiled in salted water	61	57	Mean of four studies; no. 1684, 1685, 1686, 1692 from table 1
13464	Sweet potato, boiled in salted water	61	57	Mean of four studies; no. 1684, 1685, 1686, 1692 from table 1
823	Sweetcorn, baby, canned, drained	54	52	Mean of five studies; no. 1616–1620 from table 1
824	Sweetcorn, kernels, canned, reheated, drained	54	52	Mean of five studies; no. 1616–1620 from table 1
825	Sweetcorn, on-the-cob, whole, boiled in unsalted water	54	52	Mean of five studies; no. 1616–1620 from table 1
836	Yam, raw	37	54	Mean of four studies; no. 1697–1700 from table 1
837	Yam, boiled in unsalted water	37	54	Mean of four studies; no. 1697–1700 from table 1
860	Apricots, raw	57	34	From table 1 no. 948
14025	Apricots, raw	57	34	From table 1 no. 948
861	Apricots, raw, weighed with stones	57	34	From table 1 no. 948
14026	Apricots, raw, weighed with stones	57	34	From table 1 no. 948
864	Apricots, canned in juice	57	51	From table 1 no. 949
14290	Apricots, canned in juice	57	51	From table 1 no. 949
867	Bananas	52	60	Mean of three studies; no. 959–961 from table 1
14045	Bananas	52	60	Mean of three studies; no. 959–961 from table 1
868	Bananas, weighed with skin	52	60	Mean of three studies; no. 959–961 from table 1
14046	Bananas, weighed with skin	52	60	Mean of three studies; no. 959–961 from table 1
876	Cherries, raw	22	63	From table 1 no. 970
14061	Cherries, raw	22	63	From table 1 no. 970
877	Cherries, raw, weighed with stones	22	63	From table 1 no. 970
14062	Cherries, raw, weighed with stones	22	63	From table 1 no. 970
878	Cherries, canned in syrup	–	41	From table 1 no. 971
14067	Cherries, canned in syrup	–	41	From table 1 no. 971
886	Dates, raw, weighed with stones	100	42	Mean of five studies; no. 973–977 from table 1
14084	Dates, raw, weighed with stones	100	42	Mean of five studies; no. 973–977 from table 1
887	Dates, dried, weighed with stones	100	42	Mean of five studies; no. 973–977 from table 1
14086	Dates, dried, weighed with stones	100	42	Mean of five studies; no. 973–977 from table 1
888	Dried mixed fruit	–	60	UK value; no. 992 from table 1
14087	Dried mixed fruit	–	60	UK value; no. 992 from table 1
891	Fruit cocktail, canned in juice	–	54	From table 1 no. 980
14096	Fruit cocktail, canned in juice	–	54	From table 1 no. 980
894	Fruit salad, home-made	–	52	Mean of no. 945, 959–961, 980, 984, 994/995, 1013 from table 1
14099	Fruit salad, home-made	–	52	Mean of no. 945, 959–961, 980, 984, 994/995, 1013 from table 1
14303	Fruit salad, home-made	–	52	Mean of no. 945, 959–961, 980, 984, 994/995, 1013 from table 1
901	Grapefruit, canned in juice	48	47	From table 1 no. 986
14107	Grapefruit, canned in juice	48	47	From table 1 no. 986
903	Grapes, mean	46	59	From table 1 no. 984
14109	Grapes, mean	46	59	From table 1 no. 984
904	Grapes, weighed with pips	46	59	From table 1 no. 984
14110	Grapes, weighed with pips	46	59	From table 1 no. 984
908	Kiwi fruit	53	58	From table 1 no. 987
14123	Kiwi fruit	53	58	From table 1 no. 987
14293	Kiwi fruit	53	58	From table 1 no. 987
909	Kiwi fruit, weighed with skin	53	58	From table 1 no. 987
14124	Kiwi fruit, weighed with skin	53	58	From table 1 no. 987
914	Mandarin oranges, canned in juice	–	47	From table 1 no. 989
14146	Mandarin oranges, canned in juice	–	47	From table 1 no. 989
925	Melon, watermelon	72	76	Mean of two studies; no. 1034 and 1035 from table 1
14165	Melon, watermelon	72	76	Mean of two studies; no. 1034 and 1035 from table 1
14296	Melon, watermelon	72	76	Mean of two studies; no. 1034 and 1035 from table 1
14166	Melon, watermelon, weighed whole	72	76	Mean of two studies; no. 1034 and 1035 from table 1
927	Nectarines	–	43	From table 1 no. 993
14171	Nectarines	–	43	From table 1 no. 993
14297	Nectarines	–	43	From table 1 no. 993
928	Nectarines, weighed with stones	–	43	From table 1 no. 993
14172	Nectarines, weighed with stones	–	43	From table 1 no. 993
931	Oranges	42	37	Mean of two studies; no. 994 and 995 from table 1

**Table 1.** *Continued*

Food code	Description	Old value	New value	Reference/rationale for changing the value*
14175	Oranges	42	37	Mean of two studies; no. 994 and 995 from table 1
14298	Oranges	42	37	Mean of two studies; no. 994 and 995 from table 1
932	Oranges, weighed with peel and pips	42	37	Mean of two studies; no. 994 and 995 from table 1
14176	Oranges, weighed with peel and pips	42	37	Mean of two studies; no. 994 and 995 from table 1
935	Paw-paw, raw	59	56	From table 1 no. 999
14180	Paw-paw, raw	59	56	From table 1 no. 999
936	Paw-paw, raw, weighed with skin and pips	59	56	From table 1 no. 999
14181	Paw-paw, raw, weighed with skin and pips	59	56	From table 1 no. 999
940	Peaches, canned in juice	38	40	Mean of three studies; no. 1000–1002 from table 1
14188	Peaches, canned in juice	38	40	Mean of three studies; no. 1000–1002 from table 1
941	Peaches, canned in syrup	52	61	Mean of three studies; no. 1003–1005 from table 1
14189	Peaches, canned in syrup	52	61	Mean of three studies; no. 1003–1005 from table 1
945	Pears, canned in juice	44	43	From table 1 no. 1011
14197	Pears, canned in juice	44	43	From table 1 no. 1011
946	Pears, canned in syrup	–	25	From table 1 no. 1010
14198	Pears, canned in syrup	–	25	From table 1 no. 1010
947	Pineapple, raw	59	66	From table 1 no. 1013
14208	Pineapple, raw	59	66	From table 1 no. 1013
948	Pineapple, canned in juice	59	50	Mean of three studies; no. 1014, 1015 and 1016 from table 1
14211	Pineapple, canned in juice	59	50	Mean of three studies; no. 1014, 1015 and 1016 from table 1
969	Sultanas	56	57	Mean of three studies; no. 1029–1031 from table 1
14263	Sultanas	56	57	Mean of three studies; no. 1029–1031 from table 1
976	Cashew nuts, roasted and salted	–	25	Mean of five studies; no. 1317–1321 from table 1
14811	Cashew nuts, plain	–	25	Mean of five studies; no. 1317–1321 from table 1
14812	Cashew nuts, roasted and salted	–	25	Mean of five studies; no. 1317–1321 from table 1
985	Mixed nuts	–	24	UK value; no. 1323 from table 1
14827	Mixed nuts	–	24	UK value; no. 1323 from table 1
14828	Mixed nuts and raisins	–	21	UK value; no. 1322 from table 1
999	Chocolate nut spread	32	29	Mean of three studies; no. 1447–1449 from table 1
17070	Chocolate nut spread	32	29	Mean of three studies; no. 1447–1449 from table 1
1001	Honey	69	61	Mean of seventeen studies; no. 1581–1597 from table 1
17050	Honey	69	61	Mean of seventeen studies; no. 1581–1597 from table 1
1002	Honeycomb	69	61	Mean of seventeen studies; no. 1581–1597 from table 1
17051	Honeycomb	69	61	Mean of seventeen studies; no. 1581–1597 from table 1
1006	Jam, reduced sugar	–	26	From table 1 no. 1019
17075	Jam, reduced sugar	–	26	From table 1 no. 1019
1008	Marmalade	48	43	Mean of three studies; no. 996–998 from table 1
17078	Marmalade	48	43	Mean of three studies; no. 996–998 from table 1
1010	Sugar, demerara	68	65	Mean of six studies; no. 1604–1609 from table 1
17061	Sugar, demerara	68	65	Mean of six studies; no. 1604–1609 from table 1
1011	Sugar, white	68	65	Mean of six studies; no. 1604–1609 from table 1
17063	Sugar, white	68	65	Mean of six studies; no. 1604–1609 from table 1
1012	Syrup, golden	–	63	From table 1 no. 1580
1016	Chocolate, plain	43	23	From table 1 no. 1392
17090	Chocolate, plain	43	23	From table 1 no. 1392
17491	Chocolate, plain	43	23	From table 1 no. 1392
1018	Chocolates, fancy and filled	–	45	Mean value of no. 1393, 1434, 1472, 1488, 1501 from table 1
17088	Chocolates, fancy and filled	–	45	Mean value of no. 1393, 1434, 1472, 1488, 1501 from table 1
1019	Creme eggs	–	62	Estimate from no. 1442 (marshmallows) and 1443 (Milky Way) from table 1
17092	Creme eggs	–	62	Estimate from no. 1442 (marshmallows) and 1443 (Milky Way) from table 1
17544	Creme eggs	–	62	Estimate from no. 1442 (marshmallows) and 1443 (Milky Way) from table 1
1022	Milky Way	–	62	From table 1 no. 1443
17095	Milky Way	–	62	From table 1 no. 1443
17548	Milky Way	–	62	From table 1 no. 1443
1025	Boiled sweets	–	70	Estimate using mean values of jelly beans, Skittles, peppermint candy, marshmallows; no. 1432, 1433, 1438, 1442 and 1466 from table 1
17101	Boiled sweets	–	70	Estimate using mean values of jelly beans, Skittles, peppermint candy, marshmallows; no. 1432, 1433, 1438, 1442 and 1466 from table 1
1026	Fruit gums	–	70	Estimate using mean values of jelly beans, Skittles, peppermint candy, marshmallows; no. 1432, 1433, 1438, 1442 and 1466 from table 1
17107	Fruit gums/jellies	–	70	Estimate using mean values of jelly beans, Skittles, peppermint candy, marshmallows; no. 1432, 1433, 1438, 1442 and 1466 from table 1

Table 1. Continued

Food code	Description	Old value	New value	Reference/rationale for changing the value*
1027	Liquorice allsorts	–	78	From table 1 no. 1437
17112	Liquorice allsorts	–	78	From table 1 no. 1437
17113	Liquorice shapes	–	78	From table 1 no. 1437
1028	Pastilles	–	74	Estimate using mean values of jelly beans and Skittles; no. 1432, 1433, 1438 and 1466 from table 1
17108	Fruit pastilles	–	74	Estimate using mean values of jelly beans and Skittles; no. 1432, 1433, 1438 and 1466 from table 1
1029	Peppermints	–	70	From table 1 no. 1438
17117	Peppermints	–	70	From table 1 no. 1438
1031	Popcorn, plain	55	65	Mean of seven studies; no. 1451–1457 from table 1
17131	Popcorn, plain	55	65	Mean of seven studies; no. 1451–1457 from table 1
1035	Corn snacks	–	57	Mean of two studies; no. 1403 and 1404 from table 1
1036	Peanuts and raisins	–	21	UK value; no. 1322 from table 1
1037	Potato crisps	54	56	Mean of three studies; no. 1459–1461 from table 1
17133	Potato crisps	54	56	Mean of three studies; no. 1459–1461 from table 1
17495	Potato crisps	54	56	Mean of three studies; no. 1459–1461 from table 1
17134	Potato crisps, crinkle cut	54	56	Mean of three studies; no. 1459–1461 from table 1
17135	Potato crisps, jacket	54	56	Mean of three studies; no. 1459–1461 from table 1
17137	Potato crisps, square	54	56	Mean of three studies; no. 1459–1461 from table 1
17138	Potato crisps, thick cut	54	56	Mean of three studies; no. 1459–1461 from table 1
17139	Potato crisps, thick, crinkle cut	54	56	Mean of three studies; no. 1459–1461 from table 1
1038	Potato crisps, low fat	54	56	Mean of three studies; no. 1459–1461 from table 1
17136	Potato crisps, low fat	54	56	Mean of three studies; no. 1459–1461 from table 1
17496	Potato crisps, low fat	54	56	Mean of three studies; no. 1459–1461 from table 1
1039	Potato hoops	54	56	Mean of three studies; no. 1459–1461 from table 1
1040	Tortilla chips	63	57	Mean of two studies; no. 1403 and 1404 from table 1
17149	Tortilla chips	63	57	Mean of two studies; no. 1403 and 1404 from table 1
17497	Tortilla chips	63	57	Mean of two studies; no. 1403 and 1404 from table 1
1065	Drinking chocolate powder, made up with whole milk	–	36	Mean of no. 90 (Milo, dissolved in full-fat milk) and no. 91 from table 1
12094	Drinking chocolate powder, made up with whole milk	–	36	Mean of no. 90 (Milo, dissolved in full-fat milk) and no. 91 from table 1
17533	Drinking chocolate powder, made up with whole milk	–	36	Mean of no. 90 (Milo, dissolved in full-fat milk) and no. 91 from table 1
1066	Drinking chocolate powder, made up with semi-skimmed milk	–	41	From table 1 no. 98
12095	Drinking chocolate powder, made up with semi-skimmed milk	–	41	From table 1 no. 98
17532	Drinking chocolate powder, made up with semi-skimmed milk	–	41	From table 1 no. 98
1070	Horlicks powder, made up with whole milk	–	45	From table 1 no. 87
12098	Horlicks powder, made up with whole milk	–	45	From table 1 no. 87
1071	Horlicks powder, made up with semi-skimmed milk	–	45	From table 1 no. 87
12099	Horlicks powder, made up with semi-skimmed milk	–	45	From table 1 no. 87
1072	Milk shake, purchased	–	21	From table 1 no. 820
12103	Milk shake, purchased	–	21	From table 1 no. 820
1081	Lemonade, bottled	68	54	From table 1 no. 50
17179	Lemonade	68	54	From table 1 no. 50
17199	Lemonade, home-made	68	54	From table 1 no. 50
1087	Apple juice, unsweetened	40	41	Mean of four studies; no. 1037–1040 from table 1
14271	Apple juice, unsweetened	40	41	Mean of four studies; no. 1037–1040 from table 1
14272	Apple juice concentrate, unsweetened	40	41	Mean of four studies; no. 1037–1040 from table 1
1091	Orange juice, unsweetened	52	50	Mean of four studies; no. 1049–1052 from table 1
14281	Orange juice, freshly squeezed	52	50	Mean of four studies; no. 1049–1052 from table 1
14282	Orange juice, freshly squeezed, weighed as whole fruit	52	50	Mean of four studies; no. 1049–1052 from table 1
14283	Orange juice, unsweetened	52	50	Mean of four studies; no. 1049–1052 from table 1
14301	Orange juice, unsweetened	52	50	Mean of four studies; no. 1049–1052 from table 1
1093	Tomato juice	38	31	Mean of three studies; no. 1057–1059 from table 1
1123	Lentil soup	44	60	Mean of two studies; no. 1544 and 1545 from table 1
17264	Lentil soup	44	60	Mean of two studies; no. 1544 and 1545 from table 1
17263	Lentil soup, canned	44	60	Mean of two studies; no. 1544 and 1545 from table 1
1124	Chicken soup, cream of, canned	–	58	Mean of two studies; no. 1540 and 1541 from table 1
17250	Chicken soup, cream of, canned	–	58	Mean of two studies; no. 1540 and 1541 from table 1
1125	Chicken soup, cream of, canned, condensed	–	58	Mean of two studies; no. 1540 and 1541 from table 1

Table 1. *Continued*

Food code	Description	Old value	New value	Reference/rationale for changing the value*
1126	Chicken soup, cream of, canned, condensed, as served	–	58	Mean of two studies; no. 1540 and 1541 from table 1
17251	Chicken soup, cream of, canned, condensed	–	58	Mean of two studies; no. 1540 and 1541 from table 1
17252	Chicken soup, cream of, canned, condensed, as served	–	58	Mean of two studies; no. 1540 and 1541 from table 1
1127	Mushroom soup, cream of, canned	–	58	Mean of two studies; no. 1540 and 1541 from table 1
1128	Tomato soup, cream of, canned	38	50	Mean of two studies; no. 1555 and 1556 from table 1
1129	Tomato soup, cream of, canned, condensed	38	50	Mean of two studies; no. 1555 and 1556 from table 1
1130	Tomato soup, cream of, canned, condensed, as served	38	50	Mean of two studies; no. 1555 and 1556 from table 1
1133	Vegetable soup, canned	–	60	UK value; no. 1557 from table 1
17283	Vegetable soup	–	60	UK value; no. 1557 from table 1
17285	Vegetable soup, canned	–	60	UK value; no. 1557 from table 1
17286	Vegetable soup, dried	–	60	UK value; no. 1557 from table 1
17287	Vegetable soup, dried, as served	–	60	UK value; no. 1557 from table 1
1136	Instant soup powder	–	52	Mean of seven studies; no. 1538, 1544, 1548, 1552, 1554, 1558, 1559 from table 1
17259	Instant soup powder	–	52	Mean of seven studies; no. 1538, 1544, 1548, 1552, 1554, 1558, 1559 from table 1
17507	Instant soup powder	–	52	Mean of seven studies; no. 1538, 1544, 1548, 1552, 1554, 1558, 1559 from table 1
1137	Instant soup powder, as served	–	52	Mean of seven studies; no. 1538, 1544, 1548, 1552, 1554, 1558, 1559 from table 1
17260	Instant soup powder, as served	–	52	Mean of seven studies; no. 1538, 1544, 1548, 1552, 1554, 1558, 1559 from table 1
17508	Instant soup powder, as served	–	52	Mean of seven studies; no. 1538, 1544, 1548, 1552, 1554, 1558, 1559 from table 1
1138	Minestrone soup, dried	39	47	Mean of three studies; no. 1546–1548 from table 1
17266	Minestrone soup, canned	39	47	Mean of three studies; no. 1546–1548 from table 1
17267	Minestrone soup	39	47	Mean of three studies; no. 1546–1548 from table 1
17268	Minestrone soup, dried	39	47	Mean of three studies; no. 1546–1548 from table 1
1139	Minestrone soup, dried, as served	39	47	Mean of three studies; no. 1546–1548 from table 1
17269	Minestrone soup, dried, as served	39	47	Mean of three studies; no. 1546–1548 from table 1
17270	Minestrone soup, cream of, canned	39	47	Mean of three studies; no. 1546–1548 from table 1
1142	Tomato soup, dried	38	50	Mean of two studies; no. 1555 and 1556 from table 1
17281	Tomato soup, dried	38	50	Mean of two studies; no. 1555 and 1556 from table 1
1143	Tomato soup, dried, as served	38	50	Mean of two studies; no. 1555 and 1556 from table 1
17282	Tomato soup, dried, as served	38	50	Mean of two studies; no. 1555 and 1556 from table 1
17278	Tomato soup, cream of, canned	38	50	Mean of two studies; no. 1555 and 1556 from table 1
17279	Tomato soup, cream of, canned, condensed	38	50	Mean of two studies; no. 1555 and 1556 from table 1
17280	Tomato soup, cream of, canned, condensed, as served	38	50	Mean of two studies; no. 1555 and 1556 from table 1
13001	New potatoes, mean, raw	0	76	New potatoes mean of three studies; no. 1678–1680 from table 1
13002	New potatoes, boiled in salted water	50	76	New potatoes mean of three studies; no. 1678–1680 from table 1
13003	New potatoes, boiled in unsalted water	50	76	New potatoes mean of three studies; no. 1678–1680 from table 1
13004	New potatoes, in skins, boiled in salted water	50	76	New potatoes mean of three studies; no. 1678–1680 from table 1
13005	New potatoes, in skins, boiled in unsalted water	50	76	New potatoes mean of three studies; no. 1678–1680 from table 1
13008	New potatoes, chipped, fried in corn oil	75	70	From table 1 no. 1659 (Irish potato, peeled, fried in vegetable oil)
13013	Old potatoes, boiled in salted water	50	82	Mean of four studies; no. 1648–1651 from table 1
13014	Old potatoes, boiled in unsalted water	50	82	Mean of four studies; no. 1648–1651 from table 1
13015	Old potatoes, mashed with margarine	50	76	Mean of three studies; no. 1669–1671 from table 1
13021	Chips, home-made, fried in corn oil	75	70	From table 1 no. 1659 (Irish potato, peeled, fried in vegetable oil)
13022	Chips, retail, fried in vegetable oil	75	70	From table 1 no. 1659 (Irish potato, peeled, fried in vegetable oil)
13422	Chips, retail, fried in vegetable oil	75	70	From table 1 no. 1659 (Irish potato, peeled, fried in vegetable oil)
13023	Chips, French fried, retail	75	70	From table 1 no. 1659 (Irish potato, peeled, fried in vegetable oil)

Table 1. Continued

Food code	Description	Old value	New value	Reference/rationale for changing the value*
13423	Chips, French fried, retail	75	70	From table 1 no. 1659 (Irish potato, peeled, fried in vegetable oil)
13024	Chips, crinkle cut, frozen, fried in corn oil	75	70	From table 1 no. 1659 (Irish potato, peeled, fried in vegetable oil)
13025	Chips, straight cut, frozen, fried in corn oil	75	70	From table 1 no. 1659 (Irish potato, peeled, fried in vegetable oil)
13026	Chips, fine cut, frozen, fried in corn oil	75	70	From table 1 no. 1659 (Irish potato, peeled, fried in vegetable oil)
13027	Chips, thick cut, frozen, baked	75	70	From table 1 no. 1659 (Irish potato, peeled, fried in vegetable oil)
13028	Microwave chips, cooked	75	70	From table 1 no. 1659 (Irish potato, peeled, fried in vegetable oil)
13029	Oven chips, frozen baked	75	59	Mean of two studies; no. 1657 and 1658 from table 1
13030	Oven chips, thick cut, frozen, baked	75	59	Mean of two studies; no. 1657 and 1658 from table 1
13032	Instant potato powder, made up with water	85	87	Mean of six studies; no. 1660–1665 from table 1
13033	Instant potato powder, made up with whole milk	85	87	Mean of six studies; no. 1660–1665 from table 1
13034	Instant potato powder, made up with semi-skimmed milk	85	87	Mean of six studies; no. 1660–1665 from table 1
13035	Instant potato powder, made up with skimmed milk	85	87	Mean of six studies; no. 1660–1665 from table 1
13036	Potato crisps	54	56	Mean of three studies; no. 1459–1461 from table 1
13037	Potato crisps, low fat	54	56	Mean of three studies; no. 1459–1461 from table 1
13043	Baked beans, canned in tomato sauce	48	46	Mean of nine studies; no. 1076–1084 (old value used mean of two studies) from table 1
13044	Baked beans, canned in tomato sauce, reheated	48	46	Mean of nine studies; no. 1076–1084 (old value used mean of two studies) from table 1
13045	Baked beans, canned in tomato sauce, reduced sugar	48	46	Mean of nine studies; no. 1076–1084 (old value used mean of two studies) from table 1
13070	Butter beans, dried, raw	36	32	Mean of four studies; no. 1089–1092 from table 1
13071	Butter beans, dried, boiled in unsalted water	36	32	Mean of four studies; no. 1089–1092 from table 1
13072	Broad beans, canned, reheated, drained	36	32	Mean of four studies; no. 1089–1092 from table 1
13429	Broad beans, canned, reheated, drained	36	32	Mean of four studies; no. 1089–1092 from table 1
13091	Lentils, red, split, dried, raw	26	21	From table 1 no. 1115
13092	Lentils, red, split, dried, boiled in unsalted water	26	21	From table 1 no. 1115
13434	Lentils, red, split, dried, boiled in unsalted water	26	21	From table 1 no. 1115
13109	Red kidney beans, dried, raw	28	22	Mean of four studies; no. 1102–1105 from table 1
13110	Red kidney beans, dried, boiled in unsalted water	28	22	Mean of four studies; no. 1102–1105 from table 1
13111	Red kidney beans, canned, reheated, drained	28	22	Mean of four studies; no. 1102–1105 from table 1
13435	Red kidney beans, canned, reheated, drained	28	22	Mean of four studies; no. 1102–1105 from table 1
13125	Marrowfat peas, canned, reheated, drained	39	47	From table 1 no. 1116
13126	Mushy peas, canned, reheated	–	51	From table 1 no. 1611
13437	Mushy peas, canned, reheated	–	51	From table 1 no. 1611
13127	Peas, raw	–	51	From table 1 no. 1611
13438	Peas, raw	–	51	From table 1 no. 1611
13128	Peas, boiled in salted water	–	51	From table 1 no. 1611
13129	Peas, boiled in unsalted water	–	51	From table 1 no. 1611
13131	Peas, dried, boiled in unsalted water	–	22	From table 2 no. 2235
13133	Peas, frozen, boiled in salted water	–	51	From table 1 no. 1611
13134	Peas, frozen, boiled in unsalted water	–	51	From table 1 no. 1611
13440	Peas, frozen, boiled in unsalted water	–	51	From table 1 no. 1611
13137	Petit pois, frozen, boiled in salted water	–	51	From table 1 no. 1611
13138	Petit pois, frozen, boiled in unsalted water	–	51	From table 1 no. 1611
13142	Split peas, dried, boiled in unsalted water	–	25	UK value; no. 1128 from table 1
13200	Carrots, old, raw	47	39	Mean of four studies; no. 1621–1624 from table 1
13446	Carrots, old, raw	47	39	Mean of four studies; no. 1621–1624 from table 1
13201	Carrots, old, boiled in salted water	47	39	Mean of four studies; no. 1621–1624 from table 1
13202	Carrots, old, boiled in unsalted water	47	39	Mean of four studies; no. 1621–1624 from table 1
13447	Carrots, old, boiled in unsalted water	47	39	Mean of four studies; no. 1621–1624 from table 1
13203	Carrots, young, raw	47	39	Mean of four studies; no. 1621–1624 from table 1
13448	Carrots, young, raw	47	39	Mean of four studies; no. 1621–1624 from table 1
13204	Carrots, young, boiled in salted water	47	39	Mean of four studies; no. 1621–1624 from table 1
13205	Carrots, young, boiled in unsalted water	47	39	Mean of four studies; no. 1621–1624 from table 1
13449	Carrots, young, boiled in unsalted water	47	39	Mean of four studies; no. 1621–1624 from table 1



Table 1. *Continued*

Food code	Description	Old value	New value	Reference/rationale for changing the value*
13206	Carrots, frozen, boiled in unsalted water	47	39	Mean of four studies; no. 1621–1624 from table 1
13207	Carrots, canned, reheated, drained	47	39	Mean of four studies; no. 1621–1624 from table 1
13450	Carrots, canned, reheated, drained	47	39	Mean of four studies; no. 1621–1624 from table 1
13312	Parsnip, raw	97	52	From table 1 no. 1626
13313	Parsnip, boiled in salted water	97	52	From table 1 no. 1626
13314	Parsnip, boiled in unsalted water	97	52	From table 1 no. 1626
13454	Parsnip, boiled in unsalted water	97	52	From table 1 no. 1626
13323	Plantain, raw	40	66	From table 1 no. 1859
13324	Plantain, boiled in unsalted water	40	66	From table 1 no. 1859
13325	Plantain, ripe, fried in vegetable oil	–	90	From table 1 no. 1860
13326	Pumpkin, raw	–	64	Mean of three studies; no. 1613–1615 from table 1
13327	Pumpkin, boiled in salted water	–	64	Mean of three studies; no. 1613–1615 from table 1
13366	Sweetcorn, baby, fresh and frozen, boiled in salted water	54	52	Mean of five studies; no. 1616–1620 from table 1
13367	Sweetcorn, baby, canned, drained	54	52	Mean of five studies; no. 1616–1620 from table 1
13368	Sweetcorn, kernels, raw	54	52	Mean of five studies; no. 1616–1620 from table 1
13369	Sweetcorn, kernels, boiled in salted water	54	52	Mean of five studies; no. 1616–1620 from table 1
13370	Sweetcorn, kernels, boiled in unsalted water	54	52	Mean of five studies; no. 1616–1620 from table 1
13371	Sweetcorn, kernels, canned, reheated, drained	54	52	Mean of five studies; no. 1616–1620 from table 1
13459	Sweetcorn, kernels, canned, reheated, drained	54	52	Mean of five studies; no. 1616–1620 from table 1
13372	Sweetcorn, on-the-cob, whole, raw	54	52	Mean of five studies; no. 1616–1620 from table 1
13373	Sweetcorn, on-the-cob, whole, boiled in salted water	54	52	Mean of five studies; no. 1616–1620 from table 1
13374	Sweetcorn, on-the-cob, whole, boiled in unsalted water	54	52	Mean of five studies; no. 1616–1620 from table 1
14185	Peaches, dried	–	35	UK value; no. 1008 from table 1
11093	Tortillas, made with wheat flour	38	30	From table 1 no. 1845
11205	Gateau	–	50	Used value for raspberry coffee cake; no. 8 from table 1
11275	Vanilla slices	–	42	From table 1 no. 9 (vanilla cake, frosted)
11304	Flan, pastry, with fruit	–	65	From table 2 no. 1887
11305	Flan, sponge, with fruit	–	65	From table 2 no. 1887
11306	Flan case, pastry	–	56	Used value for puff pastry; no. 37 from table 1
11341	Macaroni cheese, canned	64	49	Mean of no. 1235 (table 1) and no. 2276 (table 2)
12276	Macaroni cheese, canned	64	49	Mean of no. 1235 (table 1) and no. 2276 (table 2)
11342	Macaroni cheese	64	49	Mean of no. 1235 (table 1) and no. 2276 (table 2)
12275	Macaroni cheese	64	49	Mean of no. 1235 (table 1) and no. 2276 (table 2)
11562	Macaroni cheese	64	49	Mean of no. 1235 (table 1) and no. 2276 (table 2)
15185	Lasagne, spinach	47	20	UK value; no. 1210 from table 1
15187	Lasagne, vegetable	47	20	UK value; no. 1210 from table 1
15189	Lasagne, vegetable, retail	47	20	UK value; no. 1210 from table 1
15073	Chilli, vegetable	–	39	From table 1 no. 1247
15074	Chilli, vegetable, retail	–	39	From table 1 no. 1247
15370	Chilli, vegetable	–	39	From table 1 no. 1247
15058	Cannelloni	–	15	From table 1 no. 1180
16287	Fish fingers, cod, frozen	–	38	From table 2 no. 2246
16288	Fish fingers, cod, grilled	–	38	From table 2 no. 2246
16289	Fish fingers, cod, fried in blended oil	–	38	From table 2 no. 2246
16290	Fish fingers, cod, fried in lard	–	38	From table 2 no. 2246
16291	Fish fingers, cod, fried in sunflower oil	–	38	From table 2 no. 2246
16292	Fish fingers, economy, frozen	–	38	From table 2 no. 2246
16305	Seafood pasta, retail	–	40	From table 1 no. 1238
17071	Fruit spread	–	51	Mean of four studies; no. 955–958 from table 1
17114	Marshmallows	–	62	From table 1 no. 1442
17191	Fruit drink, low calorie, concentrated	–	45	From table 1 no. 1041
17192	Fruit drink, low calorie, concentrated, made up	–	45	From table 1 no. 1041
17193	Fruit drink, low sugar, concentrated, fortified	–	45	From table 1 no. 1041
17194	Fruit drink, low sugar, concentrated, fortified, made up	–	45	From table 1 no. 1041
11534	Bagels, plain	72	69	From table 1 no. 101
11616	Carrot cake with topping	–	36	From table 1 no. 3

SMP, skimmed milk powder; UHT, ultra high temperature.

\*table 1 refers to the first table of the International GI Tables, 2008<sup>(6)</sup>; table 2 refers to the second table of the International GI Tables, 2008<sup>(6)</sup>.

previously documented methods of estimating GI<sup>(23–26)</sup>, which is important if our methodology is to be implemented by other researchers in the clinical research setting. However, it must be noted that the majority of studies looking at the effects of a low-GI diet have not described their methods of GI estimation in detail.

Certain limitations exist in the current methodology. In general, the area of GI is fraught with difficulty and inaccuracy. Ideally, individual foods need to be tested under laboratory conditions to determine exact GI values, and, in cases where this is not done, there is no established method of calculating or accurately estimating the GI of a given food. Even where the GI has been measured, inter-laboratory variations have been previously documented<sup>(27)</sup>. Differences in foods and food terminology between different countries also contribute to limitations in the use of GI values internationally. It would be of interest to see whether using the most up-to-date GI values results in stronger or weaker correlations with disease markers such as HDL-cholesterol in future research.

Several foods in the WISP database remain without a GI value; hence, any research involving WISP analysis of dietary GI will continue to be limited in its accuracy. However, adding and amending of values carried out in the present study will help to reduce this inaccuracy. Further updates to the GI values in the database are necessary. No GI data exist for foods studied in the Irish population specifically, thus limiting studies on GI carried out in Ireland. However, national dietary surveys carried out in Ireland<sup>(28–30)</sup> and the UK<sup>(31,32)</sup> have reported similar macro- and micronutrient intakes in both countries, implying that the food choices contributing to these nutrient intakes may be comparable. However, with the limited data available, the present study aimed to assign GI values to foods, as closely as possible to the most recent published GI data.

### Conclusion

To our knowledge, this is the first study to describe a method for adding and amending GI values to the nutrition software package WISP. Describing such methods will help to standardise the estimation of GI values and to increase the utility of GI in both clinical and research settings.

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