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THE SCOTTISH DIET: ESTIMATIONS OF ENERGY DENSITY AND EXPENDITURE

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Executive Summary

Introduction

Energy density can be defined as the available energy in a standard weight of food. The Scottish Government (2010) has highlighted the importance of consuming a less energy dense diet in the Obesity Route Map. Within the route map there is an explicit commitment to support consumers to make less energy dense food choices. Furthermore, as part of the ongoing Scottish Government revision of the Scottish Dietary Targets, it is important to explore the potential for developing an energy density goal for Scotland.

Aim and Purpose

The aim of the current work was to assess the feasibility of utilising an established and ongoing statistical methodology to analyse purchase data from the Expenditure and Food Survey (EFS) (now the UK Living Costs and Food module of the Integrated Household Survey) to estimate the mean energy density of the Scottish diet and the range of energy density across households. Differences in energy density were examined: over time; by socio-economic status; by household composition; by food brought into the household compared to food eaten out, and for households meeting dietary targets for fat and fruit & vegetables. In addition, the spend on food and drink (excluding alcohol) was explored. This work provides a measure of the distribution of energy density and food and drink costs in the population which will inform the possible development of future dietary goals, targets and food policy.

Results and Discussion

The World Cancer Research Fund (WCRF) suggests a population level energy density goal for diets of 125kcal/100g (not including drinks). The average energy density in the Scottish diet using a similar method of calculation was 172kcal/100g. Households in the lowest quintile (fifths of the population) for energy density had an estimated mean energy density of 123kcal/100g which is equivalent to the WCRF goal. There was no change in energy density between 2001 and 2008. Those living in the most deprived areas were consuming diets with the highest energy density (177kcal/100g compared to 168kcal/100g) (averages for the most and least deprived quintiles). Food eaten out provided approximately 15% of kcal and had a mean energy density which was approximately 30% higher than household food. There was no linear association for the proportion of kcal eaten out by deprivation.

The mean spend on food and drink (excluding alcohol) per 2000kcal (around the average requirement for an adult per day) was £5.21 in 2008, with the average cost of eating out (for 2000kcal) being approximately 3 times higher. There were significant differences in mean spend on food and drink per 2000kcal by deprivation and household type with the most deprived having the lowest spend per 2000kcal.

Conclusions

Food purchase data from the EFS has successfully provided a means of estimating the energy density for the Scottish diet. The results show that the average energy density is considerably higher than the public health goal recommended by the WCRF. However a mean of less than 125kcal/100g was found for the lowest quintile of energy density demonstrating that the WCRF goal can be achieved by some households. A similar energy density dietary goal for Scotland could therefore be proposed and monitored. It is an important finding that households in deprived areas have the highest energy density and the lowest spend on food and non-alcoholic drinks per 2000kcal.

Background

Energy density can be defined as the available energy in a standard weight of food. The World Cancer Research Fund (WCRF, 2007) express energy density in terms of kilocalories per 100g but the scientific literature on the topic usually expresses it as kJ/g.

It is suggested that the regular consumption of energy dense foods (those foods with a high energy content by weight) is likely to result in the consumption of excess energy and hence to promote weight gain and obesity. This is because humans have a weak innate ability to recognise foods with a high energy density and to appropriately reduce the bulk of food eaten in order to maintain energy balance (Prentice and Jebb, 2003).

In 2007, the World Cancer Research Fund (WCRF) made a recommendation to limit consumption of energy-dense foods (particularly processed foods high in added sugar, low in fibre, or high in fat) with the public health goal that average energy density of diets be lowered towards 125kcal per 100g. The Scottish Government (2010) has highlighted the importance of consuming a less energy dense diet in the Obesity Route Map. Four key areas for action were identified for preventing overweight and obesity. One of these areas is reducing demand for and consumption of excessive amounts of high calorie foods and drinks. There is also an explicit commitment to support consumers to make less energy dense food choices. As part of the ongoing Scottish Government revision of the Scottish Dietary Targets, it is therefore important to explore the potential for developing an energy density goal for Scotland.

There are a range of methods to measure energy density reported in the literature (see Appendix 1 for details). Cox and Mela (2000) used 6 defined methods to calculate energy density and Ledikwe *et al*. (2009) 8 methods. More recent work from Hartline-Grafton *et al*. (2009) calculated energy density from food and energy density from beverages but included items such as smoothies and milk on cereals in the energy density from food estimation. They showed a positive association between energy density from food (but not from beverages) and BMI. Cox and Mela (2000) found that obese subjects had diets with a significantly higher energy density than lean subjects when energy density was calculated from food and milk but not food alone. In an intervention study to treat obesity, Ello Martin *et al*. (2007) found that participants who consumed a reduced fat and increased fruit and vegetable regime reduced energy density from food (excluding all caloric beverages (such as milk and juices) as well as non-caloric beverages) from approximately 175kcal/100g to 123kcal/100g and maintained a level below 126kcal/100g for the 12 month period of the study. They found that whilst participants in both study groups had lost significant amounts of body weight at 12 months, individuals who reduced their energy density by combining decreased fat intake with increased fruit and vegetable intake reported being less hungry than those who only reduced their fat intake. This demonstrates that the energy density quoted by WCRF is achievable with support (assuming this excludes all beverages), and could be an effective strategy for managing body weight while controlling hunger.

It should be noted that all the energy density calculations mentioned were performed on individual diet records collected by 24 hour dietary recall (Ledikwe *et al*., 2005; Hartline-Grafton *et al*., 2009) or 4 day

weighed food diaries (Cox and Mela, 2000). Although the WCRF suggest a public health goal of 125kcal/100g not including drinks the exact method by which this might be calculated is not defined. However the energy density presented by Prentice and Jebb (2003) for women (from the 1986/87 Survey of British Adults aged 16-64 years) who consumed no more than 35% energy from fat and at least 400g of fruit and vegetables per day was 125kcal/100g. This value for energy density was calculated for the whole diet minus tea, coffee, water and soft drinks – i.e. food and milk. Personal communication with Martin Wiseman (Medical and Scientific Adviser World Cancer Research Fund International) suggests that this was the basis of the WCRF recommendation.

Most dietary recommendations focus on reducing consumption of high energy dense foods i.e. those high in fat and/or sugar. Diets should contain a higher proportion of starchy carbohydrate, fish, fruit and vegetables. Foods with a high energy density are often less expensive per kcal than foods with a lower energy density. Consideration should therefore be given to the cost implications of guidelines to decrease energy density and the impact that these guidelines may have on individuals with lower incomes. Several studies have investigated diet costs with regards to energy density (Drewnowski *et al*., 2004; Drewnowski and Darmon, 2005; Monsivais and Drewnowski, 2007; Maillot *et al*., 2007; Waterlander *et al*., 2010) with each finding an inverse relationship between energy density and energy cost, that is the higher the energy density the lower the cost of the diet.

Scottish household food purchase data from the UK Expenditure and Food Survey (EFS) (from 2008 the UK Living Costs and Food (LCF) module of the Integrated Household Survey (IHS)) are currently the primary data source for monitoring progress towards the Scottish Dietary Targets (SDTs). As part of the Food Standards Agency Scotland (FSAS) dietary monitoring programme, Barton *et al*. (2010) have developed a robust methodology to monitor food and nutrient intakes in Scotland. The survey collects household food purchase and eating out data from every person over seven years of age in each household over a 14 day period. Although it is not designed to measure intakes of specific individuals, valuable data on average population intakes, appropriate for population level goals, for specific food groups and nutrients can be produced. The data have been analysed to estimate food and nutrient consumption in Scotland over the period 2001 to 2006 and further work is in progress to continue this analysis up to 2009 (Food Standards Agency Scotland Project S14035). However, to date, energy density and associated spend on food have not been calculated as part of this work.

Aim and Purpose

The aim of the current work was to assess the feasibility of utilising the established and ongoing statistical methodology of the FSA funded Scottish Dietary Target monitoring project (S14035) to provide an estimation of the energy density of the Scottish diet (Part 1). In addition, differences over time, by quintile of energy density, socioeconomic group, household composition, and those households meeting dietary targets for fat and fruit & vegetables were examined. In Part 2, the aim was to explore the relationship between energy density and the cost of food purchased and to estimate the cost of 2000kcal. Overall this work provides a measure of the distribution of energy density and associated spend on food in the population which will inform future dietary goals, targets and food policy.

The purpose of this project was to estimate:

The Energy Density of the Scottish Diet - Part 1

- Develop a method for calculating energy density using different criteria (Table 1) from EFS data and decide on the most appropriate criteria
- Estimate the energy density of the Scottish Diet, from EFS data for Scotland from 2001-2008
    - As an overall average
    - Over time (2001-2008)
    - By quintile of energy density
    - By quintile of Scottish Index of Multiple Deprivation (SIMD)
    - By household composition
    - By those households meeting dietary targets for fat and fruit & vegetables
- Explore the potential for developing an energy density goal for Scotland

The spend on food and non-alcoholic drinks - Part 2

- Develop a method of calculating the spend on food (as purchased) per kilocalorie (as consumed) of the Scottish Diet
- Estimate the spend on food per kilocalorie (presented per 2000kcal) of the Scottish Diet, from EFS data for Scotland from 2001-2008
    - As an overall average
    - Over time (2001-2008)
    - By quintile of energy density
    - By quintile of Scottish Index of Multiple Deprivation (SIMD)
    - By household composition
    - By those households meeting dietary targets for fat and fruit & vegetables

Part 1 - Estimating the Energy Density of the Scottish Diet

Methodology

The Expenditure and Food Survey (EFS) is a continuous survey of households in the United Kingdom commissioned jointly by the UK Office for National Statistics (ONS) and the Department for Environment and Rural Affairs (Defra). Full details of the secondary analysis of the EFS methodology including detail about assumptions and limitations are provided by Barton *et al*. (2010). EFS data for each year, in raw form, were already available having been obtained from the UK Data Archive, as were data on the sampling methodology of the EFS households and Scottish Index of Multiple Deprivation (SIMD) which were obtained from ONS.

Household and eating out purchases of foods and drinks were used to calculate energy density using several different criteria (Table 1) after appropriate adjustment for waste and weight increase or loss due to cooking or dilution. Due to the nature of the data, it was not possible to determine how the foods/drinks were consumed, therefore all liquids that can be consumed as drinks (with the exception of meal replacements) were classified as a drink (e.g. milk) and not as a food (e.g. milk on cereal may be considered a food by many). This means that it was not possible to use exactly the same criteria as some of the published studies.

Table 1: Criteria used to define energy density categories

Energy Density Category*	Comment
1. Food	Includes meal replacements (as reconstituted) Excludes all other liquids consumed as drinks
2. Food and Milk	As category 1 but also includes all milk (as reconstituted where required)
3. Food, Milk and Energy Containing (Non-Alcoholic) Drinks	As category 2 but also includes non-alcoholic drinks with at least 5kcal/100g (e.g. white coffee, sugar containing soft drinks, diluted where required)
4. Food, Milk and Non-Alcoholic Drinks	Includes all food and drink (as diluted where required and tea and coffee as consumed weight) with the exception of alcoholic beverages and tap water
5. All Food & Drink	Includes all food and drink (as diluted where required and tea and coffee as consumed weight) with the exception of tap water

*Foods and drinks included / excluded in each of the categories are listed in Appendix 1

Coding frames were constructed for each of the energy density categories described in Table 1. The coding frames indicate which foods/drinks were included within each energy density category and list adjustment factors (see Appendix 2 for more details).

Energy density values per 100g (by each energy density category) for each household were calculated in MS Access by dividing the total household energy content for each energy density category (adjusted for waste) by the total household weight for each energy density category (adjusted by conversion factors and waste) and multiplying by 100 (see Appendix 2 for more details).

Adjustment factors were applied to make the results more accurate, e.g. to only include edible portions, to adjust for cooking / dilution, to adjust purchases for waste etc. All factors were taken from published sources

and were the most reliable estimates available for use with population data. It is accepted that all individuals may not behave in the same way e.g. with regards to waste and that there may be differences by socioeconomic group but there is currently little evidence to suggest this.

Any households with no energy density value for any of the categories (due to not purchasing foods / drinks within the particular category) were allocated 0kcal/100g so that they were not excluded from the calculation of the average energy density. The energy density data were then merged into the SPSS database for project S140035 which contains additional information for each household needed for statistical analysis e.g. Defra household weighting factor (to make the sample representative of the Scottish population) (ONS, 2010), year of data collection, quintile of SIMD and household composition. Quintiles of energy density for each energy density category were calculated by year (to negate any difference in energy density over time). In addition households meeting the targets for fat and fruit & vegetables ($\leq$ 35% food energy and $\geq$ 400g per day respectively) were selected in order to see if the mean energy density consumed was similar to that of the Prentice and Jebb (2003) value of 125kcal/day, which was used in setting the WCRF public health goal. The statistical analyses were carried out in the complex samples component of SPSS adjusting for the sampling methodology (ONS, 2010) of the original data collected by the ONS (to make the sample representative of the Scottish population). The weighted sample is approximately one thousandth that of the Scottish population (5 million), where 8 years data are pooled the sample size is therefore 8 times this. General linear modelling was used to obtain mean, 95% CI and an indication of statistical significance.

Results

Table 2 provides an overall estimate of energy density for the Scottish diet (combined for the years 2001 to 2008) for each of the different energy density categories. It illustrates the differences in the estimates obtained depending on the criteria used for calculating energy density and that the inclusion of all drinks reduces the energy density by half that of food alone. There was no change in average energy density between 2001 and 2008 for any of the categories (see Appendix 3, Table A3-1).

Table 3 provides estimates by quintiles of energy density for each of the different energy density categories. In particular it can be seen that those in the lowest energy density quintile had an average energy density from food and milk of 123 kcal/100g which is similar to the energy density public health goal (125 kcal/100g) from the WCRF.

Table 4 provides estimates of energy density by SIMD quintile for each of the different energy density categories. These results show that those who live in the most deprived quintile of SIMD consume diets that are statistically higher in energy density than those who live in the least deprived quintile of SIMD with a clear linear trend (*P-value of linear association <0.001*) for the food, and food and milk categories. For the latter the most deprived had an average of 177 kcal/100g and the least deprived 168 kcal/100g.

The aim was to explore appropriate ways to estimate the energy density of the Scottish diet. A mean of less than 125 kcal/100g was found for the lowest quintile of energy density (Table 3) for the food and milk category. Given that the energy density calculation used for the WCRF public health goal is that for food and milk (Wiseman, personal communication), that milk is often considered a food (rather than a drink) and that clear differences were seen due to SIMD, the decision was made that the calculation based on food and milk was the most appropriate method to use to estimate the energy density of the Scottish diet. The following results therefore refer solely to energy density for food and milk.

Table 5 provides estimates of energy density by household composition and shows that households with children had a higher mean energy density than those with couples or single adults (but not those with 2 or more adults and no children). To investigate if the results for SIMD were confounded by a higher number of households with children in the most deprived SIMD quintiles, a breakdown of the effect on SIMD in the different household compositions was carried out. The effect size was similar following adjustment showing that a higher energy density diet is still more likely in the most deprived quintile regardless of household composition; results are provided in Appendix 3 (Table A3-2). Following adjustment of SIMD by household type, there was still a statistically significant difference for energy density in kcal per 100g (*P-value of overall association* <0.001).

Table 6 shows that the percentage of kcal obtained from food eaten out is just under 15% of the total energy consumed with no statistical significant linear association due to SIMD.

Table 7 provides the mean energy density separately for household and eating out food consumption by SIMD quintiles. The energy density of food eaten out was about 30% higher than that of household food.

Whilst there is a statistically significant linear trend for household food consumption no such relationship exists for foods eaten out. There is however a significant difference for overall association (*P=0.038*) with the energy density, for eating out, with the most affluent quintile being more energy dense (between 10 and 17 kcal /100g higher) than the other quintiles of SIMD.

Table 8 shows that the mean energy density (calculated from food and milk) of households achieving the Scottish dietary targets for fat (≤ 35% food energy) and fruit & vegetables (≥ 400g per day) was 136 kcal/100g compared with 175 kcal/100g for non achieving households. When adjusted for SIMD it was found that the effect was not confounded by deprivation.

Table 2: Mean Overall Energy Density

Energy Density Category	Mean 95% CI
Food (kcal per 100g)	205 203, 206
Food and Milk (kcal per 100g)	172 171, 174
Food, Milk & EC NA Drinks (kcal per 100g)	147 146, 149
Food, Milk & NA Drinks (kcal per 100g)	105 104, 107
All Food & Drink (kcal per 100g)	97 96, 98
n Households n People n People Weighted[1]	*4477* *10152* *39910*

2001-2008 Household and eating out consumption combined; EC= energy containing; NA = non-alcoholic

From 2006 the EFS moved from a financial year to a calendar year basis. As a consequence of this the January to March 2006 data are duplicated in the 2005/2006 and the 2006 data

[1]The results are weighted to the Scottish population - the total number provided is approximately 1000th of the Scottish population multiplied by 8 as 8 years of data used in the analysis

Table 3: Mean Value of Energy Density Quintiles

Energy Density Category	1 Least Dense Mean 95% CI	2 Mean 95% CI	3 Mean 95% CI	4 Mean 95% CI	5 Most Dense Mean 95% CI
Food (kcal per 100g)	146 144, 147	179 178, 179	199 199, 200	222 222, 223	274 271, 278
Food and Milk (kcal per 100g)	123 122, 124	151 150, 151	167 167, 168	187 187, 188	231 229, 234
Food, Milk & EC NA Drinks (kcal per 100g)	105 104, 106	128 127, 128	143 142, 143	160 159, 160	202 200, 205
Food, Milk & NA Drinks (kcal per 100g)	51 50, 52	80 79, 80	101 101, 102	124 124, 125	171 168, 173
All Food & Drink (kcal per 100g)	48 47, 49	74 73, 74	93 92, 93	113 113, 114	158 155, 160

Quintiles based on each energy density category therefore providing sample size would clutter the table. The overall sample size = 4477 Households, 10152 People and 39910 People Weighted (the results are weighted to the Scottish population - the number provided is approximately 1000th of the Scottish population multiplied by 8 as 8 years of data used in the analysis).

2001-2008 Household and eating out consumption combined; EC= energy containing; NA = non-alcoholic

From 2006 the EFS moved from a financial year to a calendar year basis. As a consequence of this the January to March 2006 data are duplicated in the 2005/2006 and the 2006 data

Table 4: Mean Energy Density by SIMD

Energy Density Category	SIMD Quintile 1* Mean 95% CI	SIMD Quintile 2 Mean 95% CI	SIMD Quintile 3 Mean 95% CI	SIMD Quintile 4 Mean 95% CI	SIMD Quintile 5* Mean 95% CI	P-value for Linear Association
Food (kcal per 100g)	215 211, 218	207 204, 210	205 201, 208	200 196, 203	196 194, 199	***<0.001***
Food and Milk (kcal per 100g)	177 174, 179	174 171, 177	173 170, 176	170 168, 173	168 165, 170	***<0.001***
Food, Milk & EC NA Drinks (kcal per 100g)	147 145, 150	149 146, 151	147 144, 149	148 145, 150	146 144, 149	*0.463*
Food, Milk & NA Drinks (kcal per 100g)	106 103, 108	108 105, 111	107 104, 110	102 100, 105	104 102, 107	***0.036***
All Food & Drink (kcal per 100g)	97 95, 99	99 96, 101	98 95, 100	94 92, 97	96 94, 99	*0.093*
n Households n People n People Weighted[1]	*872* *1883* *7369*	*919* *1989* *7687*	*904* *2008* *7889*	*874* *2005* *8021*	*906* *2263* *8928*	

2001-2008 Household and eating out consumption combined; EC= energy containing; NA = non-alcoholic

*Scottish Index of Multiple Deprivation (SIMD) Quintiles: 1=Most Deprived; 5=Least Deprived

From 2006 the EFS moved from a financial year to a calendar year basis. As a consequence of this the January to March 2006 data are duplicated in the 2005/2006 and the 2006 data

[1]The results are weighted to the Scottish population - the total number provided is approximately 1000th of the Scottish population multiplied by 8 as 8 years of data used in the analysis

Table 5: Mean Energy Density (Food and Milk) by Household Composition

Household Composition	Mean 95% CI	n Households n People (P) / n P Weighted[1]
Single Households (kcal per 100g)	169 166, 172	*1287* *1287 / 5044*
Couples (kcal per 100g)	168 166, 171	*1468* *2938 / 10814*
>=2 Adults with no Children (not including 1 x Male + 1 x Female HH) (kcal per 100g)	176 173, 180	*411* *1221 / 6037*
Single Parent Households (kcal per 100g)	183 179, 187	*319* *826 / 2800*
>=2 Adults and Children (kcal per 100g)	177 174, 180	*992* *3880 / 15215*
P-value for Overall Association	***<0.001***	

2001-2008 Household and eating out consumption combined

From 2006 the EFS moved from a financial year to a calendar year basis. As a consequence of this the January to March 2006 data are duplicated in the 2005/2006 and the 2006 data

[1]The results are weighted to the Scottish population - the total number provided is approximately 1000th of the Scottish population multiplied by 8 as 8 years of data used in the analysis

Table 6: Energy[1] Obtained from Household and Eating Out Purchases by SIMD

	SIMD Quintile 1* Mean 95% CI	SIMD Quintile 2 Mean 95% CI	SIMD Quintile 3 Mean 95% CI	SIMD Quintile 4 Mean 95% CI	SIMD Quintile 5* Mean 95% CI	P-value for Linear Association	Average Mean 95% CI
Household (%)	84.6	85.0	85.8	86.2	85.0	*0.432*	85.3
	83.1, 86.0	83.8, 86.3	84.6, 87.0	85.1, 87.2	83.6, 86.4		84.8, 85.9
Eating Out (%)	15.4	15.0	14.2	13.8	15.0	*0.432*	14.7
	14.0, 16.9	13.7, 16.2	13.0, 15.4	12.8, 14.9	13.6, 16.4		14.1, 15.2
n Households	*872*	*919*	*904*	*874*	*906*		*4477*
n People	*1883*	*1989*	*2008*	*2005*	*2263*		*10152*
n People Weighted[2]	*7369*	*7687*	*7889*	*8021*	*8928*		*39910*

2001-2008 Combined. *Scottish Index of Multiple Deprivation (SIMD) Quintiles: 1=Most Deprived; 5=Least Deprived

From 2006 the EFS moved from a financial year to a calendar year basis. As a consequence of this the January to March 2006 data are duplicated in the 2005/2006 and the 2006 data

[1]From food and non-alcoholic beverages

[2]The results are weighted to the Scottish population - the total number provided is approximately 1000th of the Scottish population multiplied by 8 as 8 years of data used in the analysis

Table 7: Mean Household and Eating Out Energy Density (Food and Milk) by SIMD

	SIMD Quintile 1* Mean 95% CI	SIMD Quintile 2 Mean 95% CI	SIMD Quintile 3 Mean 95% CI	SIMD Quintile 4 Mean 95% CI	SIMD Quintile 5* Mean 95% CI	P-value for Linear Association	Average Mean 95% CI
Household (kcal per 100g)	167	165	164	163	158	***<0.001***	163
	164, 169	162, 167	162, 167	160, 166	155, 161		162, 165
Eating Out (kcal per 100g)	214	210	207	208	224	*0.205*	213
	203, 225	200, 220	198, 217	200, 217	216, 231		208, 217
n Households	*872*	*919*	*904*	*874*	*906*		*4477*
n People	*1883*	*1989*	*2008*	*2005*	*2263*		*10152*
n People Weighted[1]	*7369*	*7687*	*7889*	*8021*	*8928*		*39910*

2001-2008 Combined. *Scottish Index of Multiple Deprivation (SIMD) Quintiles: 1=Most Deprived; 5=Least Deprived

From 2006 the EFS moved from a financial year to a calendar year basis. As a consequence of this the January to March 2006 data are duplicated in the 2005/2006 and the 2006 data

[1]The results are weighted to the Scottish population - the total number provided is approximately 1000th of the Scottish population multiplied by 8 as 8 years of data used in the analysis

Table 8: Mean Energy Density (Food and Milk) by Households Meeting Targets[1] for Fat and Fruit & Vegetables

	Mean 95% CI	n Households n People (P) / n P Weighted[2]
Households Meeting Targets (kcal per 100g)	136	*309*
	134, 139	*554 / 2165*
Households not Meeting Targets (kcal per 100g)	175	*4168*
	174, 176	*9596 / 37745*
P-value for Overall Association	***<0.001***	

2001-2008 Household and eating out consumption combined

From 2006 the EFS moved from a financial year to a calendar year basis. As a consequence of this the January to March 2006 data are duplicated in the 2005/2006 and the 2006 data

[1]Fat target ≤35% food energy; Fruit & vegetable target >400g/day

[2]The results are weighted to the Scottish population - the total number provided is approximately 1000th of the Scottish population multiplied by 8 as 8 years of data used in the analysis

Discussion

The aim of Part 1 of this report was to assess the feasibility of estimating the energy density of the Scottish diet by utilising the ongoing statistical methodology of the FSA funded Scottish Dietary Target monitoring project (S14035). Differences in energy density over time, by quintile of energy density, socioeconomic group, household composition and by whether the household diet meets the Scottish dietary targets for fat and fruit & vegetables were examined. This work has the potential to be used to monitor the energy density of the Scottish diet over time and can inform possible future dietary goals, targets and food policy on energy density.

This work has shown that is feasible to use the data from the EFS to provide an estimate of the energy density of the Scottish Diet. Different ways to calculate energy density ranging from that calculated from food only to that which includes all foods and drinks (excluding tap water) were considered. Food purchase data obtained from the EFS were used to calculate estimates of energy density for the population using data from 2001-2008 for each of the 5 energy density categories. Due to the low energy density of drinks (caused by their high water content) the estimates of energy density for all food and drink combined were approximately half that of food alone.

The assumptions made and limitations of using household food purchase data to estimate food and nutrient intakes have been documented by Barton *et al*. (2010). The main limitation of the EFS is that it is based on records of household food purchases analysed to provide population data (per person) and not on dietary assessment of individuals. It is therefore not possible to look at different age groups of the population. However any biases that may be brought about by differences in household composition (e.g. households with babies who are consuming predominantly milk) should be minimised by the fact that each household is weighted with regards to the number of similar households in the population and any estimate should be representative of the Scottish population. A further limitation that is only of relevance to this work and as such is not mentioned by Barton *et al*. (2010) is that tap water as an addition to food or as a drink cannot be included. Adjustments have been made for dried foods (e.g. pasta and rice) and dilution factors have been included for concentrated soft drinks, tea and coffee, but it is not possible to estimate tap water added during cooking or consumed as a drink. The estimates given are therefore not a true reflection of what would be expected from whole diet analysis e.g. weighed food diaries, in that they are likely to be higher and particularly so for “Food, Milk and Non-Alcoholic Drinks” and “All Food & Drink” categories

As discussed by the WCRF (2007) the inclusion of drinks reduces the energy density of the overall diet as, regardless of type, most drinks fall within their definition of low energy density at less than 100kcal per 100g. The inclusion of non-alcoholic drinks in any dietary goal for energy density may lead to confusion as individuals may see that the increased consumption of any type of drink reduces the overall energy density of their diet regardless of the fact that consuming energy containing drinks increases overall energy intake. Whilst milk has a higher nutritional value than sugar containing soft drinks, there is little difference in terms of energy content and this too could lead to mixed messages for the general public. We therefore propose that since the WCRF already have public health goals in the public domain for energy density, any possible future dietary goals set for Scotland should consider their rationale. In providing a goal for energy density for

food only or food and milk, separate to that of sugar containing drinks and alcohol, it allows for possible goals for drinks to be considered separately. It is acknowledged that soft drinks make a substantial contribution to NMES intake and these are also monitored (Food Standards Agency Scotland Project S14035).

This work has highlighted that only the mean of the lowest quintile of energy density for food and milk meets the public health goal set by the WCRF (125kcal/100g). Comparison with other UK figures published on energy density (Cox and Mela, 2000) found little difference between energy density from food and that from food and milk calculated from 4 day weighed records (Appendix 1). These figures equated to approximately 140 kcal/100g, which is similar to the average obtained for food and milk from the 2nd lowest quintile of energy density in Table 3. As previously mentioned a mean of less than 125 kcal/100g was found for the lowest quintile of energy density for food and milk and this is similar to that found by Prentice and Jebb (2003) for women meeting dietary recommendations for fruit and vegetables, and fat. This suggests that the WCRF public health goal is achievable by some. It can also been assumed that the calculation for the WCRF public health goal was done on the basis of food and milk (Wiseman, personal communication). Another argument for only including food or food and milk is that these are the only categories where statistically significant differences with a clear linear trend were found by SIMD. Assuming that one of the key reasons for setting dietary goals is to reduce inequalities in health (of which diet is a part), setting any goal using a definition which highlights differences by SIMD allows for these differences to be monitored over time, to measure the impact of interventions targeted at more deprived sections of the population. We therefore recommend that any future goal for energy density, monitored using the food purchase data from the EFS, should be in terms of food including milk. Tables 5, 7 and 8 present further results using the food and milk category only.

Considering household composition it appears that households with children tend to have diets with the highest energy density but children do not appear to be the reason for the higher energy density of the diet in the most deprived quintiles of SIMD. Within different household types there is still an effect of SIMD (Appendix 3, Table A3-2). Interestingly there was no difference in the proportion of kcal eaten out (Table 6) by SIMD quintiles (14-15% of total kcal).

Further work could consider any impact of rurality /urbanisation on energy density (by means of urban rural classification, adjusted for deprivation) as this may also have an impact on health inequalities. Additional, work could be carried out to model diets meeting the WCRF public health goal to determine the feasibility of its achievement across all quintiles of deprivation. An initial analysis has been carried out estimating the energy density of the diet for the small percentage of households that meet the Scottish Dietary Targets for fat and fruit & vegetables. As expected the energy density of the diet was significantly lower for these households.

Part 2 will explore the cost per unit energy over time, by quintile of energy density, socioeconomic group, household composition and by whether the household diet meets the Scottish dietary targets for fat and fruit & vegetables.

Key Findings

- The average energy density of food in the Scottish diet was found to be 205kcal/100g.
- The average energy density of food (including milk) in the Scottish diet was found to be 172 kcal/100g.
- There was no change in average energy density of the Scottish Diet from 2001-2008.
- The lowest quintile of energy density has a mean estimate of 123kcal/100g which is equivalent to the WCRF public health goal.
- Those who live in the most deprived areas consume diets with the highest energy density from food (215kcal/100g compared to 196kcal/100g) and food including milk (177kcal/100g compared to 168 kcal/100g) (averages of the most and least deprived quintiles).
- Food eaten out provides approximately 15% of kcal and has a mean energy density approximately 30% higher than household food.
- There was no difference in the proportion of kcal eaten out or the energy density of food eaten out by SIMD

Part 2 Spend on food and non-alcoholic drinks

Methodology

A background to the secondary analysis of the Expenditure and Food Survey methodology is provided at the beginning of Part 1, Methodology (page 6).

The expenditure data relating to household and eating out purchases of foods and drinks were used to calculate an average spend per person per day. Due to the nature of the data, it was not possible to select the expenditure data solely for food and milk of eating out purchases. Cost values were therefore calculated using all food and non-alcoholic drinks for both household and eating out data to enable comparison between the two. The data used to calculate spend on food and drinks were as recorded at the time, i.e. no adjustment was made to account for year of purchase and therefore the figures given should not be compared with current prices.

Average spend per 2000kcal as eaten for each household was calculated for household, eating out and combined purchases by dividing the spend per person per day by the estimated energy intake (kcal) per person per day and multiplying by 2000kcal (where estimated energy intake was less than 0.1 kcal per person per day, spend per 2000kcal was adjusted to £0 per 2000kcal (n=8) as these values were causing extreme outliers to be calculated in 3 of the cases). The figure of 2000kcal was used as this is the average energy requirement of an adult per day and previous work by Barton *et al*. (2010) had highlighted that there was no difference in energy intake by SIMD.

Any households with no spend for any of the scenarios (due to not purchasing foods / drinks, purchasing foods / drinks with no energy value or consuming “free” food) were allocated £0 per 2000kcal so that they were not excluded from the calculation of the average spend. As with the energy density data, the cost data were merged into the SPSS database for project S140035 and the statistical analyses were carried out in the complex samples component of SPSS (see page 7 for further information).
The results are provided as population means (i.e. include non-consumers) with 95% confidence intervals.

Results

As expected the mean spend per 2000kcal for both household food and food eaten out increased from 2001 to 2008 (Table 9). The mean spend for 2000kcal eaten out was approximately 3 times that of 2000kcal of household food regardless of year.

Tables 10 to 13 present the costs of 2000kcal for all food and non-alcoholic drinks along with the mean energy density for food and milk which is repeated for information and comparison. As recommended in Part 1 the energy density for food and milk was used as the figure most similar to the WCRF public health goal and most suitable for a potential energy density goal.

Table 10 shows that households in the highest quintile for energy density have the lowest spend per 2000kcal for all food and non alcoholic drink. Households in the lowest quintile for energy density have the highest mean spend which was about 30% more than that of the highest quintile.

Table 11 provides the mean spend per 2000kcal for food and non-alcoholic drink purchases eaten out, compared with household, together with the combined spend across the SIMD quintiles. The cost was greatest in the least deprived quintile of the SIMD and lowest in the most deprived quintiles for all categories.

Single parent households had the lowest mean cost per 2000kcal (and the highest mean energy density) of the household types followed by other households with children (Table 12).

For the small percentage (<7%) of households that met the Scottish Dietary Targets for fat and fruit & vegetables, the mean spend per 2000kcal was significantly higher than the mean spend for households not meeting these targets who also had a higher mean energy density (Table 13). After adjustment of cost by SIMD the difference between the 2 groups attenuated (from £0.49 to £0.30), however this difference was still statistically significant.

Table 9: Mean cost of 2000kcal for All Food and Non-Alcoholic Drinks by Year

	2001 Mean 95% CI	2002 Mean 95% CI	2003 Mean 95% CI	2004 Mean 95% CI	2005 Mean 95% CI	2006[1] Mean 95% CI	2007 Mean 95% CI	2008 Mean 95% CI	P-value for Linear Association	Average Mean 95% CI
Household Cost (£)	3.37	3.52	3.62	3.67	3.76	3.87	4.04	4.33	***<0.001***	3.78
	3.26, 3.49	3.40, 3.65	3.46, 3.77	3.52, 3.82	3.56, 3.96	3.73, 4.00	3.88, 4.21	4.13, 4.53		3.70, 3.85
Eating Out Cost (£)	9.94	8.62	8.93	10.48	10.93	11.80	12.72	13.15	***<0.001***	10.83
	7.64, 12.23	7.83, 9.41	7.88, 9.98	9.13, 11.83	9.56, 12.29	10.24, 13.36	11.25, 14.18	11.74, 14.55		10.28, 11.39
Household and Eating Out Cost Combined (£)	3.83	4.04	4.04	4.39	4.45	4.63	4.78	5.21	***<0.001***	4.42
	3.65, 4.00	3.87, 4.21	3.87, 4.22	4.02, 4.76	4.18, 4.71	4.44, 4.82	4.61, 4.96	4.89, 5.53		4.31, 4.54
n Households	*619*	*585*	*546*	*590*	*566*	*577*	*500*	*494*		*4477*
n People	*1414*	*1342*	*1266*	*1329*	*1285*	*1365*	*1093*	*1056*		*10152*
n People Weighted[1]	*5015*	*4967*	*4952*	*4948*	*4939*	*4906*	*5040*	*5143*		*39910*

From 2006 the EFS moved from a financial year to a calendar year basis. As a consequence of this the January to March 2006 data are duplicated in the 2005/2006 and the 2006 results

[1]The results are weighted to the Scottish population - the total number provided is approximately 1000th of the Scottish population. For the overall mean the number provided is approximately 1000th of the Scottish population multiplied by 8 as 8 years of data used in the analysis

Table 10: Mean Cost per 2000kcal for All Food and Non-Alcoholic Drinks by Quintiles of Energy Density (Food & Milk)

	1 Least Dense Mean 95% CI	2 Mean 95% CI	3 Mean 95% CI	4 Mean 95% CI	5 Most Dense Mean 95% CI	P-value for Linear Association
Household and Eating Out Combined Cost (£)	4.97 4.69, 5.25	4.84 4.62, 5.06	4.40 4.24, 4.57	4.28 4.14, 4.43	3.76 3.60, 3.92	***<0.001***
Food and Milk Energy Density (kcal/100g)	123 122, 124	151 150, 151	167 167, 168	187 187, 188	231 229, 234	
n Households n People n People Weighted[1]	*893* *1711* *6593*	*896* *2016* *8013*	*897* *2127* *8224*	*896* *2210* *8817*	*895* *2088* *8263*	

[1]The results are weighted to the Scottish population - the total number provided is approximately 1000th of the Scottish population multiplied by 8 as 8 years of data used in the analysis

2001-2008 Household and eating out consumption combined

From 2006 the EFS moved from a financial year to a calendar year basis. As a consequence of this the January to March 2006 data are duplicated in the 2005/2006 and the 2006 data

Table 11: Mean Cost of 2000kcal for All Food and Non-Alcoholic Drinks by SIMD

	SIMD Quintile 1* Mean 95% CI	SIMD Quintile 2 Mean 95% CI	SIMD Quintile 3 Mean 95% CI	SIMD Quintile 4 Mean 95% CI	SIMD Quintile 5* Mean 95% CI	P-value for Linear Association
Household Cost (£)	3.40 3.28, 3.51	3.60 3.52, 3.68	3.71 3.58, 3.83	3.82 3.73, 3.91	4.27 4.13, 4.41	***<0.001***
Eating Out Cost (£)	7.65 6.85, 8.44	8.89 8.15, 9.63	11.69 10.01, 13.36	11.32 10.35, 12.29	13.96 12.43, 15.49	***<0.001***
Household and Eating Out Combined Cost (£)	3.81 3.60, 4.02	4.09 3.97, 4.20	4.31 4.16, 4.46	4.53 4.40, 4.65	5.24 5.02, 5.46	***<0.001***
Food and Milk Energy Density (kcal/100g)	177 174, 179	174 171, 177	173 170, 176	170 168, 173	168 165, 170	***<0.001***
n Households n People n People Weighted[1]	*872* *1883* *7369*	*919* *1989* *7687*	*904* *2008* *7889*	*874* *2005* *8021*	*906* *2263* *8928*	

2001-2008 Combined. *Scottish Index of Multiple Deprivation (SIMD) Quintiles: 1=Most Deprived; 5=Least Deprived

From 2006 the EFS moved from a financial year to a calendar year basis. As a consequence of this the January to March 2006 data are duplicated in the 2005/2006 and the 2006 data

[1]The results are weighted to the Scottish population - the total number provided is approximately 1000th of the Scottish population multiplied by 8 as 8 years of data used in the analysis

Table 12: Cost per 2000kcal for All Food and Non-Alcoholic Drinks by Household Composition

Household Composition	Cost per 2000kcal Mean 95% CI	Energy Density Mean 95% CI	n Households n People (P) / n P Weighted[1]
Single Households (£)	4.63	169	*1287*
	4.26, 4.99	166, 172	*1287 / 5044*
Couples (£)	4.60	168	*1468*
	4.46, 4.74	166, 171	*2938 / 10814*
>=2 Adults with no Children (not including 1 x Male + 1 x Female HH) (£)	4.69	176	*411*
	4.49, 4.88	173, 180	*1221 / 6037*
Single Parent Households (£)	3.63	183	*319*
	3.42, 3.84	179, 187	*826 / 2800*
>=2 Adults and Children (£)	4.28	177	*992*
	4.11, 4.44	174, 180	*3880 / 15215*
P-value for Overall Association	***<0.001***	***<0.001***	

2001-2008 Household and eating out consumption combined

From 2006 the EFS moved from a financial year to a calendar year basis. As a consequence of this the January to March 2006 data are duplicated in the 2005/2006 and the 2006 data

[1]The results are weighted to the Scottish population - the total number provided is approximately 1000th of the Scottish population multiplied by 8 as 8 years of data used in the analysis

Table 13: Cost per 2000kcal for All Food and Non-Alcoholic Drinks by Households Meeting Targets[1] for Fat and Fruit & Vegetables

	Cost per 2000kcal Mean 95% CI	Energy Density Mean 95% CI	n Households n People (P) / n P Weighted[2]
HH Meeting Targets[2] (£)	4.89	136	*309*
	4.66, 5.12	134, 139	*554 / 2165*
HH not Meeting Targets (£)	4.40	175	*4168*
	4.28, 4.51	174, 176	*9596 / 37745*
P-value for Overall Association	***<0.001***	***<0.001***	

2001-2008 Household and eating out consumption combined

From 2006 the EFS moved from a financial year to a calendar year basis. As a consequence of this the January to March 2006 data are duplicated in the 2005/2006 and the 2006 data

[1]Fat target ≤35% food energy; Fruit & vegetable target >400g/day

[2]The results are weighted to the Scottish population - the total number provided is approximately 1000th of the Scottish population multiplied by 8 as 8 years of data used in the analysis

Discussion

The aim of Part 2 of this report was to explore the relationship between energy density and the cost of food purchased and to examine differences over time, by quintile of energy density, socioeconomic group, household composition and by whether the household diet meets the Scottish dietary targets for fat and fruit & vegetables.

A method was developed to calculate and compare the cost of 2000 kcal for groups in the population who exhibit differences in mean energy density. The figure of 2000kcal was chosen as a round figure similar to the average energy needs of an adult and widely quoted by food manufacturers as the Guideline Daily Amount. In general the work has shown that groups with a high mean energy density diet pay the least to meet their energy needs, a finding in agreement with the research literature (Drewnowski *et al*., 2004; Drewnowski and Darmon, 2005; Monsivais and Drewnowski, 2007; Maillot *et al*., 2007; Waterlander *et al*., 2010) showing that the higher the energy density the lower the cost of the diet.

It should be noted that the energy density figures given in the tables for comparison purposes are for food and milk (the energy density category most closely matched to the WCRF public health goal). However the cost per 2000kcal was calculated for food and non-alcoholic drinks. This enabled the whole cost of the diet (excluding alcohol) to be considered.

The household and eating out data was expressed per 2000kcal for comparison purposes, however it is unlikely that households would consume all their food "eaten out". Food consumption patterns and the resulting cost may not be the same if the entire diet was eaten out as compared to the 15% of food energy estimated to be provided from eating out purchases.

In order to make statistically meaningful comparisons of the cost increase over the 8 year period no adjustment of costs was made to the 2008 equivalent. Adjustment to 2008 prices was not carried out due to the time restraints of the project but would be worth considering in future work. In addition, differing household numbers in each year may cause problems with pooling unadjusted data, however, due to population weighting and the fact that there was no statistical difference in SIMD within each year, any errors caused by this should be minimised.

The mean cost of 2000kcal was £4.42, which included the large majority of households that did not meet the Scottish Dietary Targets for fat and fruit & vegetables. We can compare this with the mean cost for those households who met the targets, which was 11% higher and also for those in the energy density quintile with a mean similar to the WCRF public health goal of 125kcal/100g which was 12% higher. It should also be noted that those in the least deprived quintiles for SIMD had a mean cost of 2000kcal that was 19% higher than the average overall yet had a mean energy density of 168kcal which suggests those with a higher income chose to spend more on food without further impact on energy density.

Further work could be carried out to further explore the dietary patterns of households who have achieved a lower energy dense diet to find out how it is achieved in practice at a cost acceptable to more deprived households.

Key Findings

- The average cost of 2000kcal for both household and eaten out food increased from 2001 to 2008.
- The average cost of 2000kcal in 2008 was found to be £5.21.
- The highest quintile of energy density had the lowest average cost per 2000kcal.
- Those who live in the most deprived areas consume diets with a lower cost per 2000kcal.
- Single parent households had the lowest mean cost per 2000kcal, followed by other households with children.

Overall Conclusion

Food purchase data from the EFS has successfully provided a means of estimating the energy density for the Scottish diet and exploring food and drink costs in the population. The results show that the average energy density is considerably higher than the public health goal recommended by the WCRF. However a mean similar to 125 kcal/100g was found for the lowest quintile of energy density demonstrating that the WCRF public health goal can be achieved by some households. The results also highlight that energy density and spend are inversely related with the mean cost per 2000kcal in the lowest energy density quintile being higher than in the highest energy density quintile.

This report has shown that an energy density dietary goal for Scotland similar to that of the WCRF could be proposed and monitored. However, it would be important to consider that households in deprived areas have the highest energy density and the lowest spend on food and non-alcoholic drinks per 2000kcal.

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Appendix 1: Examples of Methods of Calculating Energy Density

Criteria used to measure energy density and mean values (kcal/100g)

Calculation Method	Comment*	Mean kcal/100g	Reference
Food only	Excludes all beverages	136-141[1] 185 187	Cox and Mela (2000) Ledikwe *et al*. (2005) Hardline-Grafton *et al*. (2009)
Food and Milk	Excludes tea, coffee, water and soft drinks	144-175 125[2]	Prentice and Jebb (2003)
Food and milk	Includes food and dairy beverages with protein 3.1g/100g	168	Ledikwe *et al*. (2005)
Food and milk	Includes all milk	141-155[1]	Cox and Mela (2000)
Food and liquid meal replacements	Includes food and beverages that replace meals. Powdered meal replacements included as reconstituted	185	Ledikwe *et al*. (2005)
Food and alcohol	Includes all beverages containing alcohol	175	Ledikwe *et al*. (2005)
Food and juice	Includes 100% fruit and vegetable juices	176	Ledikwe *et al*. (2005)
Food, juice and milk	Criteria as above	161	Ledikwe *et al*. (2005)
Food and energy containing beverages	Includes beverages with at least 5kcal/100g	152	Ledikwe *et al*. (2005)
Food and energy containing beverages	Excludes water, tea and coffee infusions, diet drinks	115 -117	Cox and Mela (2000)
Food and all beverages excluding water		94	Ledikwe *et al*. (2005)
Food and all beverages	Appears to include water	77-84	Cox and Mela (2000)
Dry matter	Excludes all water and water in composition	454 -471	Cox and Mela (2000)
Protein, Carbohydrate and fat only		500	Cox and Mela (2000)

*Refer to individual references for exact inclusion / exclusion criteria

[1] Lower figure is average for lean subjects (BMI 20-25) and the higher figure is for obese subjects (BMI ≥ 30)

[2]Energy density for subset of women aged 16-64 consuming no more than 35% energy from fat and at least 400g of fruit and vegetables per day

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Appendix 2: Further Detail on Methodology

The coding frames indicate which foods were included within each energy density category and list conversion factors for foods which are not normally eaten raw (e.g. meat and fish), or dried (e.g. rice and pasta), and for eggs (which are recorded by Defra per egg rather than by weight). Defra apply a dilution factor to dried milks and concentrated soft drinks prior to the data being made available on the UK Data Archive so no dilution factors were required for these items. Dilution factors were applied to drinks which would be re-constituted with water prior to consumption i.e. tea and coffee but not to those which would be re-constituted with milk i.e. hot chocolate, as the milk was already included in the calculations. All other foods which may not be consumed in their purchased state e.g. flour, stock cubes, jelly cubes were not given a factor as it was not possible to tell how these foods may be prepared and subsequently consumed. The required conversion factors were available from previous and ongoing projects (Food Standards Agency Scotland Projects S14034 and S14035) which were obtained from McCance and Widdowson's Composition of Foods series and manufacturers' information.

Full details of the secondary analysis of the EFS methodology are provided by Barton *et al*. (2010). EFS data for each year, in raw form, were already available having been obtained from the UK Data Archive, as were data on the sampling methodology of the EFS households and Scottish Index of Multiple Deprivation (SIMD) which were obtained from the UK Office of National Statistics (ONS).

Calculating Weight of Food / Drink

The total weight of food / drink for each household (by energy density category) was calculated by summing the weights of each food after making adjustments for waste (factors provided by WRAP/Defra) and multiplying by the conversion factors described above.

Calculating Energy Content of Food / Drink

The total energy from food / drink for each household (by energy density category) was calculated by summing the energy content of each food after making adjustments for waste only, as the nutrient values in the database are based on the foods in their purchased form not in the form they are consumed.

Calculating Energy Density

The energy density values per 100g (by each energy density category) for each household were calculated by dividing the total household energy content for each energy density category (adjusted for waste) by the total household weight for each energy density category (adjusted by conversion factors and waste) and multiplying by 100.

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Summary Coding Frame – See below

Summary Coding Frame 12th January 2011

Food Code	Description	Household (HH) or Eaten Out (EO)	Food	Food & Milk	Food, Milk and EC NA Drinks	Food and NA Drinks	All Food and Drink	Factor	Source	Key
402	UHT whole milk	HH	×	✓	✓	✓	✓	1	PCA Coding Frame	PCA - Project S14034
403	Sterilised whole milk	HH	×	✓	✓	✓	✓	1	PCA Coding Frame	EFS Monitoring - Project S14035
404	Pasteurised or homogenised whole milk	HH	×	✓	✓	✓	✓	1	PCA Coding Frame	
501	School milk	HH	×	✓	✓	✓	✓	1	PCA Coding Frame	Food - no factor required
601	Welfare milk	HH	×	✓	✓	✓	✓	1	PCA Coding Frame	Food - cooked edible weight factor
901	Condensed or evaporated milk	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	Food - dried weight factor & eggs
1102	Infant or baby milks - ready to drink	HH	×	✓	✓	✓	✓	1	PCA Coding Frame	No nutritional information
1103	Infant or baby milks - dried (reconstituted)	HH	×	✓	✓	✓	✓	1	PCA Coding Frame	Milk
1201	Instant dried milk (reconstituted)	HH	×	✓	✓	✓	✓	1	PCA Coding Frame	Other energy containing NA drinks
1301	Yoghurt	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	No / low energy drinks
1302	Fromage frais	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	Alcohol
1502	Fully skimmed milk	HH	×	✓	✓	✓	✓	1	PCA Coding Frame	
1503	Semi-skimmed milk	HH	×	✓	✓	✓	✓	1	PCA Coding Frame	
1603	Dairy desserts - not frozen	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
1605	Dried milk products (reconstituted)	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
1606	Milk drinks & other milks	HH	×	✓	✓	✓	✓	1	PCA Coding Frame	
1607	Milk drinks & other milks	HH	×	✓	✓	✓	✓	1	PCA Coding Frame	
1608	Non-dairy milk substitutes	HH	×	✓	✓	✓	✓	1	PCA Coding Frame	
1701	Cream	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
2201	Hard cheese - Cheddar type	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
2202	Hard cheese - Other	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
2203	Hard cheese - Edam	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
2205	Cottage cheese	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
2206	Soft natural cheese	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
2301	Processed cheese	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
3102	Beef joints - on the bone	HH	✓	✓	✓	✓	✓	0.56	EFS Monitoring Coding Frame	
3103	Beef joints - boned	HH	✓	✓	✓	✓	✓	0.63	EFS Monitoring Coding Frame	
3104	Beef steak - less expensive	HH	✓	✓	✓	✓	✓	0.64	EFS Monitoring Coding Frame	
3105	Beef steak - more expensive	HH	✓	✓	✓	✓	✓	0.73	EFS Monitoring Coding Frame	
3106	Minced beef	HH	✓	✓	✓	✓	✓	0.82	EFS Monitoring Coding Frame	
3107	All other beef and veal	HH	✓	✓	✓	✓	✓	0.62	EFS Monitoring Coding Frame	
3601	Mutton	HH	✓	✓	✓	✓	✓	0.62	EFS Monitoring Coding Frame	
3602	Lamb joints	HH	✓	✓	✓	✓	✓	0.59	EFS Monitoring Coding Frame	
3603	Lamb chops	HH	✓	✓	✓	✓	✓	0.55	EFS Monitoring Coding Frame	
3604	All other lamb	HH	✓	✓	✓	✓	✓	0.71	EFS Monitoring Coding Frame	
4101	Pork joints	HH	✓	✓	✓	✓	✓	0.57	EFS Monitoring Coding Frame	
4102	Pork chops	HH	✓	✓	✓	✓	✓	0.59	EFS Monitoring Coding Frame	
4103	Pork fillets and steaks	HH	✓	✓	✓	✓	✓	0.65	EFS Monitoring Coding Frame	
4104	All other pork	HH	✓	✓	✓	✓	✓	0.63	EFS Monitoring Coding Frame	
4603	Ox liver	HH	✓	✓	✓	✓	✓	0.91	EFS Monitoring Coding Frame	
4604	Lambs liver	HH	✓	✓	✓	✓	✓	0.78	EFS Monitoring Coding Frame	

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Food Code	Description	Household (HH) or Eaten Out (EO)	Food	Food & Milk	Food, Milk and EC NA Drinks	Food and NA Drinks	All Food and Drink	Factor	Source	Key
4605	Pigs liver	HH	✓	✓	✓	✓	✓	0.88	EFS Monitoring Coding Frame	
4607	All other liver	HH	✓	✓	✓	✓	✓	0.88	EFS Monitoring Coding Frame	
5101	All offal other than liver	HH	✓	✓	✓	✓	✓	0.56	EFS Monitoring Coding Frame	
5502	Bacon and ham joints, uncooked	HH	✓	✓	✓	✓	✓	0.69	EFS Monitoring Coding Frame	
5505	Bacon and ham rashers, uncooked	HH	✓	✓	✓	✓	✓	0.66	EFS Monitoring Coding Frame	
5801	Ham and bacon (cooked)	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
5903	Cooked chicken and turkey	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
5904	Takeaway chicken	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
6201	Corned beef - canned or sliced	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
6601	Other cooked meat	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
7102	Other canned meat and meat products	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
7401	Chicken - whole or part	HH	✓	✓	✓	✓	✓	0.54	EFS Monitoring Coding Frame	
7703	Turkey - whole or part	HH	✓	✓	✓	✓	✓	0.55	EFS Monitoring Coding Frame	
7704	Poultry other than chicken or turkey	HH	✓	✓	✓	✓	✓	0.46	EFS Monitoring Coding Frame	
7801	Other fresh, chilled or frozen meat	HH	✓	✓	✓	✓	✓	0.59	EFS Monitoring Coding Frame	
7901	Sausages, uncooked - pork	HH	✓	✓	✓	✓	✓	0.78	EFS Monitoring Coding Frame	
8001	Sausages, uncooked - beef etc.	HH	✓	✓	✓	✓	✓	0.78	EFS Monitoring Coding Frame	
8302	Meat pies - ready to eat	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
8303	Sausage rolls - ready to eat	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
8401	Meat pies, pasties and puddings	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
8501	Burgers - frozen or not frozen	HH	✓	✓	✓	✓	✓	0.73	EFS Monitoring Coding Frame	
8901	Complete meat-based ready meals	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
8902	Other convenience meat products	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
9301	Pate	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
9302	Delicatessen type sausages	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
9403	Meat pastes and spreads	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
9501	Takeaway meat pies and pasties	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
9502	Takeaway burger and bun	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
9503	Takeaway kebabs	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
9504	Takeaway sausages and saveloys	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
9505	Takeaway meat based meals	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
9506	Takeaway miscellaneous meats	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
10201	White fish, fresh or chilled	HH	✓	✓	✓	✓	✓	0.94	EFS Monitoring Coding Frame	
10202	White fish, frozen	HH	✓	✓	✓	✓	✓	0.94	EFS Monitoring Coding Frame	
10601	Herrings and other blue fish, fresh or chilled	HH	✓	✓	✓	✓	✓	0.89	EFS Monitoring Coding Frame	
10602	Herrings and other blue fish, frozen	HH	✓	✓	✓	✓	✓	0.89	EFS Monitoring Coding Frame	
10701	Salmon, fresh or chilled	HH	✓	✓	✓	✓	✓	0.94	EFS Monitoring Coding Frame	
10702	Salmon, frozen	HH	✓	✓	✓	✓	✓	0.94	EFS Monitoring Coding Frame	
10801	Blue fish, dried or salted or smoked	HH	✓	✓	✓	✓	✓	0.71	EFS Monitoring Coding Frame	
11401	White fish, dried or salted or smoked	HH	✓	✓	✓	✓	✓	0.97	EFS Monitoring Coding Frame	
11702	Shellfish, fresh or chilled	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	

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Food Code	Description	Household (HH) or Eaten Out (EO)	Food	Food & Milk	Food, Milk and EC NA Drinks	Food and NA Drinks	All Food and Drink	Factor	Source	Key
11703	Shellfish, frozen	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
11801	Takeaway fish	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
11901	Tinned salmon	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
12001	Other tinned or bottled fish	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
12103	Ready meals and other fish products	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
12304	Takeaway fish products	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
12305	Takeaway fish based meals	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
12901	Eggs	HH	✓	✓	✓	✓	✓	50	PCA Coding Frame	
13501	Butter	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
13801	Soft margarine	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
13802	Other margarine	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
13901	Lard, cooking fat	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
14304	Olive Oil	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
14305	Other vegetable and salad oils	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
14802	Reduced fat spreads	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
14803	Low fat spreads	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
14805	Suet and dripping	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
14807	Imitatation cream	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
15001	Sugar	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
15101	Jams and fruit curds	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
15201	Marmalade	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
15301	Syrup, treacle	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
15401	Honey	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
15501	Potatoes HH		✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
15502	Potatoes HH		✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
15503	Potatoes	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
15504	Fresh potatoes not specified elsewhere	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
15505	Fresh new potatoes	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
15506	Fresh baking potatoes	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
16201	Fresh cabbages	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
16301	Fresh brussels sprouts	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
16401	Fresh cauliflower	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
16701	Lettuce and leafy salads	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
16702	Prepared lettuce salads	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
16801	Fresh peas	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
16901	Fresh beans	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
17101	Other fresh green vegetables	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
17201	Fresh carrots	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
17301	Fresh turnips and swede	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
17401	Other fresh root vegetables	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
17501	Fresh onions, leeks and shallots	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	

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Food Code	Description	Household (HH) or Eaten Out (EO)	Food	Food & Milk	Food, Milk and EC NA Drinks	Food and NA Drinks	All Food and Drink	Factor	Source	Key
17601	Fresh cucumbers	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
17701	Fresh mushrooms	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
17801	Fresh tomatoes	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
18301	Fresh vegetable stewpack, stirfry pack etc.	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
18302	Fresh stem vegetables	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
18303	Fresh marrow, courgettes, aubergine, pumpkin and other vegetables	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
18304	Fresh herbs	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
18401	Tomatoes, canned or bottled	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
18501	Peas, canned	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
18802	Baked beans in sauce	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
18803	Other canned beans and pulses	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
19101	Other canned vegetables	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
19201	Dried pulses, other than air-dried	HH	✓	✓	✓	✓	✓	6.19	EFS Monitoring Coding Frame	
19501	Air-dried vegetables	HH	✓	✓	✓	✓	✓	14.39	EFS Monitoring Coding Frame	
19602	Tomato puree and vegetable purees	HH	✓	✓	✓	✓	✓	1	New for Energy Density Work	
19603	Vegetable juices e.g. tomato, carrot	HH	×	×	✓	✓	✓	1	EFS Monitoring Coding Frame	
19702	Chips - frozen or not frozen	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
19703	Takeaway chips	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
19801	Instant potato	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
19901	Canned potatoes	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
20002	Crisps and potato snacks	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
20101	Other potato products	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
20301	Peas, frozen	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
20401	Beans, frozen	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
20601	Ready meals and other vegetable products	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
20604	All vegetable takeaway products	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
20801	Other frozen vegetables	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
21001	Fresh oranges	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
21401	Other fresh citrus fruits	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
21701	Fresh apples	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
21801	Fresh pears	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
22101	Fresh stone fruit	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
22201	Fresh grapes	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
22701	Other fresh soft fruit	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
22801	Fresh bananas	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
22901	Fresh melons	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
23101	Other fresh fruit	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
23301	Tinned peaches, pears and pineapples	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
23601	All other tinned or bottled fruit	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
24001	Dried fruit	HH	✓	✓	✓	✓	✓	1	New for Energy Density Work	

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Food Code	Description	Household (HH) or Eaten Out (EO)	Food	Food & Milk	Food, Milk and EC NA Drinks	Food and NA Drinks	All Food and Drink	Factor	Source	Key
24101	Frozen strawberries, apple slices, peach halves, oranges and other frozen fruits	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
24502	Nuts & edible seeds	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
24503	Peanut butter	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
24801	Pure fruit juices	HH	×	×	✓	✓	✓	1	EFS Monitoring Coding Frame	
25102	White bread, standard, unsliced	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
25202	White bread, standard, sliced	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
25701	White bread, premium, sliced and unsliced	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
25801	White bread, soft grain, sliced and unsliced	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
25901	Brown bread, sliced and unsliced	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
26001	Wholemeal and granary bread	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
26302	Rolls - white, brown or wholemeal	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
26303	Malt bread and fruit loaves	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
26304	Vienna and French bread	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
26305	Starch reduced bread and rolls	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
26308	Other breads	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
26309	Sandwiches	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
26310	Sandwiches from takeaway	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
26311	Takeaway breads	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
26401	Flour	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
26701	Buns, scones and teacakes	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
27001	Cakes and pastries, not frozen	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
27002	Takeaway pastries	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
27101	Crispbread	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
27402	Sweet biscuits (not choc) and cereal bars	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
27403	Cream crackers & other unsweet biscuits	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
27702	Chocolate biscuits	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
28101	Oatmeal and oat products	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
28202	Muesli	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
28203	High fibre breakfast cereals	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
28204	Sweetened breakfast cereals	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
28205	Other breakfast cereals	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
28502	Canned or fresh carton custard	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
28503	All canned milk puddings	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
28601	Puddings	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
28702	Dried rice	HH	✓	✓	✓	✓	✓	2.77	PCA Coding Frame	
28703	Cooked rice	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
28704	Takeaway rice	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
29001	Invalid, slimming and sports foods	HH	✓	✓	✓	✓	✓	1	New for Energy Density Work	
29101	Infant cereal foods	HH	✓	✓	✓	✓	✓	1	New for Energy Density Work	
29402	Cakes and pastries - frozen	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	

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Food Code	Description	Household (HH) or Eaten Out (EO)	Food	Food & Milk	Food, Milk and EC NA Drinks	Food and NA Drinks	All Food and Drink	Factor	Source	Key
29501	Canned pasta	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
29502	Dried and fresh pasta	HH	✓	✓	✓	✓	✓	2.27	PCA Coding Frame	
29503	Takeaway pasta and noodles	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
29601	Pizzas - frozen and not frozen	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
29602	Takeaway pizza	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
29907	Cake, pudding and dessert mixes	HH	✓	✓	✓	✓	✓	8.50	PCA Coding Frame	
29909	Cereal snacks	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
29915	Quiches and flans - frozen and not frozen	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
29916	Takeaway crisps, savoury snacks, popcorn, popadums, prawn crackers	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
29919	Other cereal foods - frozen and not frozen	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
30101	Other cereals	HH	✓	✓	✓	✓	✓	1	New for Energy Density Work	
30401	Tea	HH	×	×	×	✓	✓	83	PCA Coding Frame	
30701	Coffee beans and ground coffee	HH	×	×	×	✓	✓	52	PCA Coding Frame	
30801	Instant coffee	HH	×	×	×	✓	✓	173	PCA Coding Frame	
30901	Coffee essences	HH	×	×	✓	✓	✓	20.80	PCA Coding Frame	
31001	Tea and coffee from takeaway	HH	×	×	×	✓	✓	1	PCA Coding Frame	
31201	Cocoa and chocolate drinks	HH	×	✓	✓	✓	✓	1	New for Energy Density Work inc Milk	
31301	Malt drinks and chocolate versions of malted drinks	HH	×	✓	✓	✓	✓	1	New for Energy Density Work inc Milk	
31401	Mineral or spring waters	HH	×	×	×	✓	✓	1	PCA Coding Frame	
31501	Baby foods	HH	✓	✓	✓	✓	✓	1	New for Energy Density Work	
31801	Soups - canned or cartons	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
31901	Soups - dehydrated or powdered	HH	✓	✓	✓	✓	✓	9.40	PCA Coding Frame	
32001	Soups - from takeaway	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
32101	Other takeaway food brought home	HH	×	×	×	×	×			
32201	Meals on wheels - items not specified	HH	✓	✓	✓	✓	✓	1	New for Energy Density Work	
32302	Salad dressings	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
32303	Other spreads and dresssings	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
32702	Pickles	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
32703	Sauces	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
32704	Takeaway sauces and mayonnnais	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
32801	Stock cubes and meat and yeast extracts	HH	✓	✓	✓	✓	✓	1	New for Energy Density Work	
32901	Jelly squares or crystals	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
33203	Ice cream tub or block	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
33302	Ice cream cornets, choc-ices, lollies with ice cream	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
33303	Ice lollies, sorbet, frozen mousse, frozen yoghurt	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
33304	Takeaway ice cream, ice cream products, milkshakes	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	

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Food Code	Description	Household (HH) or Eaten Out (EO)	Food	Food & Milk	Food, Milk and EC NA Drinks	Food and NA Drinks	All Food and Drink	Factor	Source	Key
33401	Salt	HH	×	×	×	×	×			
33501	Artificial sweeteners	HH	×	×	×	×	×			
33602	Vinegar	HH	×	×	×	×	×			
33603	Spices and dried herbs	HH	×	×	×	×	×			
33604	Bisto, gravy granules, stuffing mix, baking powder, yeast	HH	×	×	×	×	×			
33605	Wine and beer making kits	HH	×	×	×	×	×			
33606	Fruit teas, instant tea, herbal tea, rosehip tea	HH	×	×	×	×	×			
33607	Payment for food, type not specified	HH	×	×	×	×	×			
33901	Soya and novel protein foods	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
34001	Soft drinks, concentrated, not low calorie (reconstituted)	HH	×	×	✓	✓	✓	1	EFS Monitoring Coding Frame	
34101	Soft drinks, not concentrated, not low calorie (reconstituted)	HH	×	×	✓	✓	✓	1	EFS Monitoring Coding Frame	
34301	Soft drinks, concentrated, low calorie	HH	×	×	×	✓	✓	1	EFS Monitoring Coding Frame	
34401	Soft drinks, not concentrated, low calorie	HH	×	×	×	✓	✓	1	EFS Monitoring Coding Frame	
35001	Chocolate bars - solid	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
35101	Chocolate bars - filled	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
35202	Chewing gum	HH	✓	✓	✓	✓	✓	1	PCA Coding Frame	
35301	Mints	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
35302	Boiled sweets	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
35401	Fudges, toffees, caramels	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
35501	Takeaway confectionery	HH	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
38102	Beers	HH	×	×	×	×	✓	1	PCA Coding Frame	
38202	Lagers and continental beers	HH	×	×	×	×	✓	1	PCA Coding Frame	
38302	Ciders and perry	HH	×	×	×	×	✓	1	PCA Coding Frame	
38402	Champagne, sparkling wines and wine with mixer	HH	×	×	×	×	✓	1	PCA Coding Frame	
38403	Table wine	HH	×	×	×	×	✓	1	PCA Coding Frame	
38501	Spirits with mixer	HH	×	×	×	×	✓	1	PCA Coding Frame	
38601	Fortified wines	HH	×	×	×	×	✓	1	PCA Coding Frame	
38701	Spirits	HH	×	×	×	×	✓	1	PCA Coding Frame	
38801	Liqueurs and cocktails	HH	×	×	×	×	✓	1	PCA Coding Frame	
38901	Alcopops	HH	×	×	×	×	✓	1	PCA Coding Frame	
100101	Meat or fish based curry with sauce	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
100102	Meat or fish based curry without sauce	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
100103	Vegetable or fruit based curry	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
100104	Dhal and dhal dishes	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
100105	Samosas	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
100106	Other Indian dishes	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
100107	Indian breads	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	

Food Code	Description	Household (HH) or Eaten Out (EO)	Food	Food & Milk	Food, Milk and EC NA Drinks	Food and NA Drinks	All Food and Drink	Factor	Source	Key
100108	Indian buffet or shared meal or unspecified indian meal	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
100201	Chinese or Thai meat or fish based dishes excluding curry	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
100202	Chop suey and fu yung dishes	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
100203	Chinese or Thai vegetable based main course dishes excluding curry	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
100204	Chinese or Thai curry	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
100205	Spring rolls	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
100206	Other Chinese or Thai dishes	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
100207	Chinese or Thai buffet or shared meal or unspecified Chinese or Thai meal	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
100301	All other ethnic meals	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110101	Steak - without sauce e.g. braised, sirloin	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
110102	Roast meat with sauce or gravy	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110103	Pork chops with sauce or gravy	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110104	Lamb chops with sauce or gravy	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110105	Spare ribs	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
110106	Bacon	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
110107	Gammon or ham	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
110108	All offal including liver, kidney, tongue	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
110201	Chicken or turkey with sauce or gravy	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110202	Chicken or turkey in breadcrumbs or batter	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110203	Duck with sauce or gravy	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110204	Game with sauce or gravy	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110301	Small or single burgers	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110302	Large or double burgers	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110303	Chicken burger	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110401	Kebabs - all types including chicken	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110402	Plain sausages e.g. beef, pork	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
110403	Other sausages	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
110404	Hot dogs and sausage sandwiches	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110501	Meat pies (pastry topped) and pasties	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110502	Meat pies (potato topped e.g. shepherd's pie)	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110503	Sausage roll (pastry)	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110601	Meat and vegetable stews, casseroles or hotpots	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110602	Chicken or turkey stews, casseroles or hotpots	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	

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110603	Meat lasagne, cannelloni, moussaka and other meat-based oven baked dishes	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110701	All pates	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
110801	Other meat products or dishes	EO	✓	✓	✓	✓	✓	1	New for Energy Density Work	
120101	White fish - grilled, steamed, baked or boiled - without sauce	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
120102	White fish - fried (incl in batter/breadcrumbs) - without sauce	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
120201	Trout, tuna and salmon only - fresh - without sauce or dressing	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
120202	Other fatty fish - without sauce or dressing e.g. herring, mackerel, sardines	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
120301	Shellfish - without sauce or dressing e.g. prawns, shrimps, oysters, crab	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
120401	Kippers and other smoked fish e.g. salmon	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
120501	Other fish products and unspecified 'fish' e.g. squid, sushi, crabsticks	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
120601	Fish, processed, in breadcrumbs (fish fingers, fish cakes, scampi) w/o sauce	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
120602	Fish burgers (in bun)	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
120603	Fish based pie or other dish e.g. paella, kedgeree, tuna pasta bake	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
130101	Cottage cheese including with pineapple	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
130102	Soft, continental or proc cheese e.g. brie	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
130103	Cheddar, blue or other hard cheese and unspecified 'cheese'	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
130104	Quiche and cheese pies or pasties	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
130105	Other cheese dishes e.g. Welsh rarebit, cheese and biscuits	EO	✓	✓	✓	✓	✓	1	New for Energy Density Work	
130201	Pizza - cheese and tomato, vegetable or unspecified 'pizza'	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
130202	Pizza - meat, fish or poultry	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
130301	Eggs - boiled or poached	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
130302	Eggs - scrambled, fried, omelettes or unspecified 'egg'	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
130303	Other egg dishes e.g. egg mayonnaise	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
140101	Chips and french fries - from fast food outlet e.g. McDonalds	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
140102	Chips - served with meal e.g. from restaurant or chip shop	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
140103	Potatoes - boiled or unspecified 'potato'	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	

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Food Code	Description	Household (HH) or Eaten Out (EO)	Food	Food & Milk	Food, Milk and EC NA Drinks	Food and NA Drinks	All Food and Drink	Factor	Source	Key
140104	Potatoes - mashed	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
140105	Potatoes - roast	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
140106	Sautéed potatoes, potato croquettes, hash browns etc.	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
140107	Baked or jacket potatoes - without filling	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
140108	Other potato dishes (e.g. wedges, potato salad) including unspecified 'potato dish'	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150101	Lettuce and cress	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150102	Other green vegetables e.g. spinach, cabbage, sprouts	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150201	Peppers - raw or cooked	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150202	Courgettes, marrow, aubergine, pumpkin, plantain, cucumbers	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150203	Peas and sweetcorn	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150204	Baked beans and other beans (not green beans) and pulses	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150205	Tomato - fresh or raw	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150206	Tomato - cooked or processed	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150301	Carrots	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150302	Onions - raw, cooked or unspecified 'onions'	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150303	Onions - fried	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150304	Other root vegetables or tubers e.g. turnip, parsnip, radish, beetroot	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150401	Mushrooms - raw or cooked	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150501	Mixed vegetables or unspecified 'vegetable'	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150502	Other vegetables e.g. artichoke, asparagus	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
150503	Vegetables in batter or breadcrumbs and deep fried vegetables e.g. onion rings	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
150504	Onion and other vegetable bhajis and pakora	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
150601	Veggie burger, bean burger, veggie sausage, nut roast	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
150602	Vegetable lasagne, cannelloni, moussaka & other oven baked vegetable based dishes	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
150603	Stuffed vegetables (e.g. stuffed pepper) and vegetable based starter	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
150604	Vegetable based stews and casseroles and vegetable based pies	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
160101	Mixed salad, main course - without dressing	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
160102	Mixed salad, side dish - without dressing - including unspecified 'salad'	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
160103	Green salad - without dressing	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	

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Food Code	Description	Household (HH) or Eaten Out (EO)	Food	Food & Milk	Food, Milk and EC NA Drinks	Food and NA Drinks	All Food and Drink	Factor	Source	Key
160201	Vegetable or fruit and nut salad - with dressing	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
160202	Pasta, rice, mixed bean or cereal-based salads - with dressing	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
160301	Meat salad e.g. beef, lamb salads	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
160302	Chicken or turkey salad	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
160303	Fish salad e.g. tuna, salmon salads	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
160401	Cheese salad including ploughmans	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
160402	Egg salad	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
160501	Other salads e.g. Greek, Florida, Russian	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
160601	Salad buffet or buffet meal items not spec	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
170101	Fried rice and risotto	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
170102	All cooked rice exluding fried rice e.g. boiled, pilau, savoury	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
170103	Pasta - not filled and plain noodles (including pot noodle) - without sauce	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
170104	Pasta - filled e.g. ravioli, tortellini - w/o sauce	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
170105	Noodles with meat, vegetables etc.	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
180101	Meat & fish soups	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
180102	Vegetable based soups	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
180103	Chinese soups, consommé	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
180104	Other soups including unspecified 'soup'	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
190101	Muesli and oat crunch cereals	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
190102	Other high fibre breakfast cereals e.g. Allbran, Weetabix	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
190103	Sweetened breakfast cereals e.g. Frosties, Sugar Puffs	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
190104	Hot breakfast cereals e.g. porridge, Ready Brek	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
190105	Other break cereals and unspecified 'cereal' e.g. Cornflakes, Rice Krispies, Special K	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
200101	All citrus fruit, fresh e.g. orange, grapefruit	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
200102	Banana, fresh	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
200103	Apples, fresh	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
200104	Pears, fresh	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
200105	Stone fruit, fresh e.g. apricot, plum, peach, cherry, avocado	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
200106	Grapes, fresh	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
200107	Soft fruit or berries, fresh e.g. strawberries, blackberries - without cream or ice cream	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
200108	Melon, fresh	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	

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200109	Pineapple, fresh	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
200110	Fresh fruit salad	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
200111	Other fresh fruit (kiwi, passion) and unspec	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
200112	Free school fruit	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
200201	Dried fruit e.g. sultanas, raisins	EO	✓	✓	✓	✓	✓	1	New for Energy Density Work	
200301	Tinned, stewed, baked or processed fruit - without cream or ice cream	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
210101	Yoghurt and fromage frais	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
220101	White bread, with or without butter or margarine (toasted or untoasted)	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
220102	Brown or wholemeal bread, with or without butter or margarine (toasted or untoasted)	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
220103	White rolls, baguettes etc. w/o butter/ margerine (or not specified)	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
220104	Brown or wholemeal rolls, baguettes etc. w/o butter/margerine (or not specified)	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
220105	Garlic bread	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
220106	Croissant	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
220107	Continental breads e.g. pitta, ciabatta, focaccio	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
220108	Muffins, crumpets	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
220109	Fried bread, including croutons	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
220110	Other bread, rolls, toast, unspec 'bread' etc.	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
230101	Meat based sandwich on white bread/roll	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230102	Meat based sandwich on brown bread/roll	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230103	Meat based sandwich bread not specified	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230104	Chicken/turkey s'wich on white bread/roll	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230105	Chicken/ turkey s'wich on brown bread/ roll	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230106	Chicken/ turkey s'wich bread not specified	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230107	Bacon & egg based sandwich on white bread or roll inc Bacon and Egg McMuffin	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230108	Bacon & egg sandwich - brown bread or roll	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230109	Bacon & egg sandwich bread not specified	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230110	Fish based sandwich on white bread or roll	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230111	Fish based sandwich on brown bread or roll	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230112	Fish based sandwich bread not specified	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230201	Cheese sandwich on white bread or roll	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230202	Cheese sandwich on brown bread or roll	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230203	Cheese based sandwich bread not specified	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230204	Egg based sandwich on white bread or roll including Egg McMuffin	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	

Summary Coding Frame 12th January 2011

Food Code	Description	Household (HH) or Eaten Out (EO)	Food	Food & Milk	Food, Milk and EC NA Drinks	Food and NA Drinks	All Food and Drink	Factor	Source	Key
230205	Egg based sandwich on brown bread or roll	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230206	Egg based sandwich bread not specified	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230207	Vegetarian sandwich on white bread or roll	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230208	Vegetarian sandwich on brown bread or roll	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230209	Vegetarian sandwich bread not specified	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230210	Sweet-filled sandwich	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
230211	Unspecified sandwiches or rolls	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
240101	Cheese or cream based sauce e.g. carbonara, cauliflower cheese	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
240102	Meat-based sauce e.g. bolognese, chilli	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
240103	Fish or seafood based sauce	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
240104	Tomato based sauce cont veg inc ratatouille	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
240105	Other savoury sauce or unspecified 'sauce'	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
240106	Sweet sauce e.g. syrup, treacle, chocolate	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
240107	Fruit or vegetable based condiments	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
240108	Other condiments or sauces	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
240201	Salad dressings and dips	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
240202	Mayonnaise	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
240203	Coleslaw	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
240301	Fruit filling e.g. peaches for pancakes	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
240302	Vegetable filling	EO	✓	✓	✓	✓	✓	1	New for Energy Density Work	
240303	Cheese filling inc cheddar / cottage cheese	EO	✓	✓	✓	✓	✓	1	New for Energy Density Work	
240304	Fish based filling e.g. tuna mayonnaise	EO	✓	✓	✓	✓	✓	1	New for Energy Density Work	
240401	Butter and margarine	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
240402	Jam, marmalade and honey	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
240403	Cream - single, double, sour etc.	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
240404	Custard	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
240405	Sugar (as an addition to tea, coffee etc.)	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
240501	Commercial baby food in a jar or can	EO	✓	✓	✓	✓	✓	1	New for Energy Density Work	
240601	Yorkshire puddings and dumplings	EO	✓	✓	✓	✓	✓	1	New for Energy Density Work	
240701	Unspec meal e.g. school meal / meal at work	EO	✓	✓	✓	✓	✓	1	New for Energy Density Work	
250101	Coffee, black including espresso	EO	×	×	×	✓	✓	1	PCA Coding Frame	
250102	Coffee, white including cappuccino, latte	EO	×	×	✓	✓	✓	1	PCA Coding Frame	
250103	Coffee, black or white not specified	EO	×	×	×	✓	✓	1	PCA Coding Frame	
250104	Tea, white	EO	×	×	×	✓	✓	1	PCA Coding Frame	
250105	Tea, black	EO	×	×	×	✓	✓	1	PCA Coding Frame	
250106	Hot chocolate or cocoa, with milk or water	EO	×	✓	✓	✓	✓	1	PCA Coding Frame	
260201	Mineral water	EO	×	×	×	✓	✓	1	PCA Coding Frame	
260202	Soft drink (incl carbonates and still) - low calorie	EO	×	×	×	✓	✓	1	EFS Monitoring Coding Frame	

Summary Coding Frame 12th January 2011

Food Code	Description	Household (HH) or Eaten Out (EO)	Food	Food & Milk	Food, Milk and EC NA Drinks	Food and NA Drinks	All Food and Drink	Factor	Source	Key
260203	Soft drink (incl carbonates & still) - not low calorie (incl unspecified calorie content)	EO	×	×	✓	✓	✓	1	EFS Monitoring Coding Frame	
260204	Pure fruit juices	EO	×	×	✓	✓	✓	1	EFS Monitoring Coding Frame	
260205	Vegetable juices e.g. tomato, carrot juice	EO	×	×	✓	✓	✓	1	EFS Monitoring Coding Frame	
260206	Soft drink - pure juice or juice drink not spec	EO	×	×	✓	✓	✓	1	EFS Monitoring Coding Frame	
260301	Milk as a drink	EO	×	✓	✓	✓	✓	1	PCA Coding Frame	
260302	Milk on cereal	EO	×	✓	✓	✓	✓	1	PCA Coding Frame	
260303	Milkshake and flavoured milk	EO	×	✓	✓	✓	✓	1	PCA Coding Frame	
260304	Free school milk	EO	×	✓	✓	✓	✓	1	PCA Coding Frame	
270101	Spirits	EO	×	×	×	×	✓	1	PCA Coding Frame	
270102	Liqueurs	EO	×	×	×	×	✓	1	PCA Coding Frame	
270103	Cocktails	EO	×	×	×	×	✓	1	PCA Coding Frame	
270104	Spirits or liqueurs with mixer e.g. gin & tonic, Bacardi & coke	EO	×	×	×	×	✓	1	PCA Coding Frame	
270201	Wine (not sparkling) including unspec 'wine'	EO	×	×	×	×	✓	1	PCA Coding Frame	
270202	Sparkling wines (e.g. Champagne) and wine with mixer (e.g. Bucks Fizz)	EO	×	×	×	×	✓	1	PCA Coding Frame	
270203	Fortified wine e.g. sherry, port, vermouth	EO	×	×	×	×	✓	1	PCA Coding Frame	
270204	Cider or perry - half pint or bottle	EO	×	×	×	×	✓	1	PCA Coding Frame	
270205	Cider or perry - pint / can / size not spec	EO	×	×	×	×	✓	1	PCA Coding Frame	
270206	Alcoholic soft drinks (alcopops), and ready-mixed bottled drinks	EO	×	×	×	×	✓	1	PCA Coding Frame	
270301	Bitter - half pint or bottle	EO	×	×	×	×	✓	1	PCA Coding Frame	
270302	Bitter - pint or can or size not specified	EO	×	×	×	×	✓	1	PCA Coding Frame	
270303	Lager or other beers - half pint or bottle	EO	×	×	×	×	✓	1	PCA Coding Frame	
270304	Lager or other beers - pint/can/size not spec	EO	×	×	×	×	✓	1	PCA Coding Frame	
270401	Round of drinks, alcohol specified	EO	×	×	×	×	✓	1	PCA Coding Frame	
280101	Solid, unfilled chocolate bars and sweets and unspecified 'chocolate'	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
280102	Filled chocolate-coated bars and sweets e.g. Mars, Snickers, Minstrels	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
280103	Single chocolate (after dinner)	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
280104	Chewing gum and bubble gum	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
280105	Mints e.g. Polo, Extra Strong	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
280106	Boiled sweets, jellies and unspecified 'sweets' e.g. fruit gums	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
280107	Uncoated toffee or fudge, uncoated e.g. Toffos, chocolate eclairs, caramels	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
280108	Pick 'n' mix, nougat, liquorice & other sweets	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
290101	Ice cream in a cone, cornet or wafer and ice cream desserts	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	

Summary Coding Frame 12th January 2011

Food Code	Description	Household (HH) or Eaten Out (EO)	Food	Food & Milk	Food, Milk and EC NA Drinks	Food and NA Drinks	All Food and Drink	Factor	Source	Key
290103	Ice cream scoop or tub including ice cream served with dessert	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
290104	Iced lollies and sorbets	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
290201	Doughnut	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
290202	Cream pastries e.g. choc eclairs, profiteroles	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
290203	Cream sponge or gateau (not chocolate)	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
290204	Rich chocolate cake or chocolate gateau	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
290205	Fruit and other pies or pastries	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
290206	Fruit cake	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
290207	Other sponge cakes or desserts (not cream)	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
290208	Custard desserts or sweet soufflé	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
290209	Meringue desserts including pavlova	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
290210	Cheesecake	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
290211	Fool, trifle and mousse desserts	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
290212	Jelly	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
290213	Milk and rice puddings inc tapioca, semolina	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
290214	Other cakes and desserts	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
290301	Waffles and pancakes	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
290401	Teacakes, scones, currant buns, iced buns	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
300101	Fully-coated chocolate biscuits or wafers	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
300102	Sweet biscuits including half-coated choc	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
300103	Cereal bars and cereal based cakes	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
300104	Savoury biscuits	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
310101	Nuts, nut products and seeds	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
310102	Potato crisps or savoury snacks	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
310103	Cornsnacks, based on maize	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
310104	Wheat based savoury snack	EO	✓	✓	✓	✓	✓	1	EFS Monitoring Coding Frame	
310201	Popcorn	EO	✓	✓	✓	✓	✓	1	PCA Coding Frame	
310301	Other savoury snacks (inc hors d'oeuvres)	EO	✓	✓	✓	✓	✓	1	New for Energy Density Work	

Appendix 3: Additional Tables

Table A3-1: Mean Energy Density by Year

Energy Density Category	2001 Mean 95% CI	2002 Mean 95% CI	2003 Mean 95% CI	2004 Mean 95% CI	2005 Mean 95% CI	2006[1] Mean 95% CI	2007 Mean 95% CI	2008 Mean 95% CI	P-value for Linear Association
Food (kcal/100g)	206	202	209	206	203	201	206	203	*0.364*
	202, 210	198, 206	205, 213	201, 211	197, 208	197, 205	201, 211	198, 208	
Food and Milk (kcal/100g)	173	170	174	173	172	170	174	172	*0.863*
	169, 176	167, 173	170, 177	169, 177	168, 176	166, 173	170, 178	168, 176	
Food, Milk & EC NA Drinks (kcal/100g)	149	145	147	147	147	146	150	148	*0.371*
	145, 152	142, 148	143, 150	144, 150	144, 151	142, 149	146, 154	144, 152	
Food, Milk & NA Drinks (kcal/100g)	108	104	106	104	106	102	108	105	*0.796*
	104, 112	100, 108	102, 110	100, 108	102, 109	98, 105	103, 113	100, 110	
All Food & Drink (kcal/100g)	99	96	97	97	96	94	99	98	*0.943*
	95, 102	92, 99	93, 100	93, 100	93, 99	90, 97	95, 103	94, 102	
n Households	*619*	*585*	*546*	*590*	*566*	*577*	*500*	*494*	
n People	*1414*	*1342*	*1266*	*1329*	*1285*	*1365*	*1093*	*1058*	
n People Weighted[2]	*5015*	*4967*	*4952*	*4948*	*4939*	*4906*	*5040*	*5143*	

Household and eating out consumption combined

EC= energy containing; NA = non-alcoholic

[1]From 2006 the EFS moved from a financial year to a calendar year basis. As a consequence of this the January to March 2006 data are duplicated in the 2005/2006 and the 2006 results

[2]The results are weighted to the Scottish population - the number provided is approximately 1000th of the Scottish population.

Table A3-2: Mean Energy Density (Food and Milk) by SIMD and Household Composition

Household Composition		SIMD Quintile 1*	SIMD Quintile 2	SIMD Quintile 3	SIMD Quintile 4	SIMD Quintile 5*	*P-value for Linear Association*
Single Households (kcal/100g)	Mean	176	169	169	165	163	***0.002***
	95% CI	170, 181	163, 175	163, 174	158, 172	157, 169	
	n HH	*306*	*284*	*263*	*238*	*196*	
	n People (P) / n P Weighted[1]	*306 / 1218*	*284 / 1093*	*263 / 1036*	*238 / 948*	*196 / 749*	
Couples (kcal/100g)	Mean	174	171	168	166	165	***0.006***
	95% CI	168, 179	167, 176	163, 172	162, 170	161, 170	
	n HH	*226*	*293*	*302*	*313*	*332*	
	n People (P) / n P Weighted[1]	*452 / 856*	*586 / 1072*	*604 / 1097*	*626 / 1169*	*664 / 1201*	
>=2 Adults with no Children (not including 1 x Male + 1 x Female HH) (kcal/100g)	Mean	176	174	182	177	172	*0.748*
	95% CI	169, 183	167, 181	172, 191	170, 185	162, 183	
	n HH	*68*	*86*	*83*	*90*	*84*	
	n People (P) / n P Weighted[1]	*199 / 332*	*243 / 412*	*237 / 387*	*272 / 428*	*270 / 433*	
Single Parent Households (kcal/100g)	Mean	180	189	182	184	178	*0.967*
	95% CI	174, 186	178, 199	171, 194	172, 196	165, 191	
	n HH	*114*	*85*	*57*	*35*	*28*	
	n People (P) / n P Weighted[1]	*299 / 383*	*217 / 305*	*147 / 190*	*85 / 129*	*78 / 93*	
>=2 Adults and Children (kcal/100g)	Mean	181	181	179	177	171	***0.006***
	95% CI	174, 187	175, 186	173, 186	171, 182	167, 176	
	n HH	*158*	*171*	*199*	*198*	*266*	
	n People (P) / n P Weighted[1]	*627 / 619*	*659 / 654*	*755 / 808*	*784 / 787*	*1055 / 1048*	
P-value for Overall Association						***<0.001***	

2001-2008 Household and eating out consumption combined

*Scottish Index of Multiple Deprivation (SIMD) Quintiles: 1=Most Deprived; 5=Least Deprived

From 2006 the EFS moved from a financial year to a calendar year basis. As a consequence of this the January to March 2006 data are duplicated in the 2005/2006 and the 2006 results

[1]The results are weighted to the Scottish population - the total number provided is approximately 1000th of the Scottish population multiplied by 8 as 8 years of data used in the analysis