Public Health England

Quadram Institute
Science Health Food Innovation

McCance and Widdowson's The Composition of Foods Integrated Dataset 2019

User guide

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Public Health England exists to protect and improve the nation's health and wellbeing and reduce health inequalities. We do this through world-leading science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

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Introduction

Public Health England (PHE) is responsible for maintaining data on the nutrient content of the UK food supply to support the National Diet and Nutrition Survey, and funds nutrient analysis of foods commonly consumed in the UK. Data from this work, and complementary data from other sources is published as McCance and Widdowson's The Composition of Foods – the UK food composition tables. Previous data has been published in book form as a series of supplements, each containing extensive data on a specific food group, and as the summary editions. The Composition of Foods Integrated Dataset (CoFID) was first published in 2008 and brought together for the first time all the available data in electronic format as a single, consolidated dataset. The 2015 version was an update of the original published in 2008 and included all the new and recently reviewed data available at that point. Foods calculated by recipe or calculated based on another food (for example foods weighed with waste) were recalculated to include the most recent data for ingredients. A subset of the 2015 data was also published in book form as McCance and Widdowson's The Composition of Foods seventh summary edition[1]. This updated version (2019) of CoFID incorporates data from the 2015 fruit and vegetable nutrient analysis project, including associated foods with inedible portions. Some new and revised data on whole and toasted almonds has been added after consultation with the Almond Board of California, and errors found in the previous dataset have been corrected. All other values remain unchanged from CoFID (2015).

Sources of data and methods of evaluation

It is essential that food composition data is regularly updated for several reasons. New fresh, ambient, frozen, and processed foods are introduced and the nutrient content of existing foods change. This can happen when there are new varieties or new sources of supply for the raw materials. New farming practices can affect the nutritional value of both plant and animal products. New manufacturing practices, including changes in the type and amounts of ingredients, and changes in fortification practice can affect the content of processed foods. Many foods have been reformulated in line with government public health initiatives, including reductions in the amount of fat, trans fatty acids, saturated fat, sugar and salt added. Methods of preparation and cooking in the home also changed.

The analytical survey reports from 2011 onwards are available in electronic form from https://fdnc.quadram.ac.uk/. Earlier reports can be requested from Food Databanks National Capability (FDNC) using the previous link. These reports comprise raw laboratory data and have not been evaluated to the same extent as data incorporated into the CoFID.

The Composition of Foods series of publications in book form is:

- Cereals and Cereal Products, supplement (1988)
- Milk Products and Eggs, supplement (1989)
- Vegetables, Herbs and Spices, supplement (1991)
- Fifth Summary Edition (1991)
- Fruit and Nuts, supplement (1992)
- Vegetable Dishes, supplement (1992)
- Fish and Fish Products, supplement (1993)
- Miscellaneous Foods, supplement (1994)
- Meat, Poultry and Game, supplement (1995)
- Meat Products and Dishes, supplement (1996)
- Fatty Acids, supplement (1998)
- Sixth Summary Edition (2002)
- Seventh Summary Edition (2015)

Many of the values included in CoFID have been taken from the seventh summary edition and detailed supplements, themselves mainly derived from the analytical surveys programme. All the data in the supplements was included in the original version of CoFID published in 2008. The data was

extensively revised and updated for the 2015 revision of CoFID and some further revisions have been made for the latest 2019 version, mainly to fruit and vegetables. The main data source for each food is provided, where known, in the ‘main data reference’ column and refers to the references provided in Appendix A, which lists the reports and scientific literature from which data was taken.

Some foods that were included in the 2008 CoFID have not been reviewed or validated in the 2015 or 2019 update and those foods are published separately in a file containing data for ‘old’ foods. This data can be used in addition to the 2019 dataset, but users should be aware that the values for some nutrients may not represent those foods as currently consumed.

Where the values in the tables were derived by direct analysis of the foods, care was taken when designing sampling protocols to ensure that the foods analysed were representative of those consumed by the UK population. For most foods several samples were purchased at different shops, supermarkets or other retail outlets and, where appropriate, foodservice outlets or catering suppliers. Samples analysed were composite samples, consisting of equal quantities of each sub-sample purchased. When the composite sample was made up from several different brands of food, the proportion of the individual brands purchased was related to their relative shares of the retail market. Full details of samples are available in the reports in the ‘main data references’ column (Appendix A). If the food required preparation prior to analysis, techniques such as washing, soaking, cooking, etcetera, were as similar as possible to normal domestic practices. Cooking methods were based on manufacturer’s recommendations for pre-packaged foods and methods for non pre-packed foods were based on review of ‘usual’ consumer preparation. Details of preparation procedures are available in the reports in the main data reference column (Appendix A).

Where data from literature sources was included, preference was given where the food was like that in the UK, where full details of the sample, method of preparation and analysis were given, and where the results were presented in a detailed and acceptable form. EuroFIR (European Food Information Resource) datasets and tools (www.eurofir.org) were used to help evaluate data values and to calculate values for foods where suitable analytical or literature data was not available.

Where processed foods with brand names are included, they are restricted to leading brands with an established composition. No inference should be drawn from the inclusion of data for a particular brand.

The final selection of values published is dependent on the judgement of the compilers and their interpretation of the available data. Due to the large natural variability of foods, it is unlikely that a particular item will have precisely the same composition as given in these tables. This is particularly true for unprocessed foods such as cereals, dairy products, eggs, meat, fish, fruit and vegetables. The values published should be regarded as typical rather than definitive for the foods described.

Users are advised to consult other sources of data (for example product labels, manufacturers' data, published analytical reports) where appropriate, depending on their particular needs or interests, for the food item under consideration. It should be noted that manufacturers can and do change or reformulate their products and this will influence nutrient content. This is particularly relevant for foods where nutrients are added for fortification purposes, or for technological purposes, such as antioxidants or colouring agents. Information on processed foods, including fortification levels and reformulations, is often available from manufacturers' websites and from retailers.

Data formats

CoFID data is provided as Excel workbooks containing data in worksheets related to nutrient groups.

Format of Excel files

The Excel workbook worksheets consist of:

- List of worksheets in CoFID 2019
- factors
- Proximates
- Inorganics
- Vitamins
- Vitamin fractions
- Saturated fatty acids per 100g fatty acids
- Saturated fatty acids per 100g food

- Monounsaturated fatty acids per 100g fatty acids
- Monounsaturated fatty acids per 100g food
- Polyunsaturated fatty acids per 100g fatty acids
- Polyunsaturated fatty acids per 100g food
- Phytosterols
- Organic acids

Each sheet contains column headings in rows 1-3 of the spreadsheet, then data values for each individual foodstuff such that data values for a specific food code will occur in the same row in each of the worksheets.

Data values

Nutrient values are expressed per 100g of the food except in the case of alcoholic beverages which are presented per 100ml.

A trace value for a nutrient is represented by Tr.

Where a nutrient is present in significant quantities, but there is no reliable information on the amount, the value is represented by N.

In the Excel files, it is not possible to append nutrient-specific footnotes, however these are being updated in the Composition of Foods Integrated Dataset searchable website (https://quadram.ac.uk/UKfoodcomposition). Food-specific footnotes do appear in the Excel version.

Food identification

Food Code

Food Code is a number, up to 6 digits, representing the unique CoFID code representing each food.

The 2-digit prefix generally refers to the food codes used within the book supplements relating to specific food groups, for example 11- for cereals and cereal products, 12- for milk products and eggs, 16- for fish and fish products. For foods where new data has been incorporated into an existing food, a new food code has been given using the prefix for the appropriate supplement. The food codes should not be considered to have any particular significance as the electronic datasets do not relate exactly to book publications, and

each food has a unique food code. In the 2019 dataset corrections to errors have not resulted in a new food code.

Food Name (NAME)

The food name has been chosen as that most recognisable and descriptive of the food referenced.

Description (DESC)

Information given under the description describes the nature of the samples taken for analysis. Sources of values derived, either from the literature or by calculation, are also indicated under this heading.

Group (GROUP)

In these files (but not in the printed publications) a 1, 2 or 3 letter code is assigned to every food. The code letter(s) provide identification of the food group and food type to which the food belongs. A full list of the codes and their description is given in Appendix B.

Previous (PREV)

Assigned to each food which has an earlier food code with different nutrient values associated with it. It is a number, up to 6 digits, indicating previous food codes (4th, 5th or 6th edition or a supplement). Some foods may have more than 1 previous code associated with them.

Main data references (COMMENTS)

The main data reference indicates the principal report(s) or publication(s) from which most of the data for the food code is taken. Values for individual nutrients within each code may be taken from different sources, calculated or estimated from other codes. For foods that do not have an analytical report or literature source that can be referred to as the main data reference, the food description should indicate how the data has been estimated (for example from manufacturer’s data, calculated from related codes or calculated as a recipe). In some cases, there is a main data reference referring to analytical data and the description indicates that industry data has also been used to

update some nutrients, usually sodium, sugars, fats or added minerals and vitamins.

Details of nutrient data

For a more detailed definition and expression of the nutrients refer to the introductory pages of the seventh summary edition of McCance and Widdowson's The Composition of Foods[1] and of the supplement publications.

The more significant points for certain nutrients are provided in the notes below for convenience. For some nutrients, data which is 'old' and was analysed significantly earlier and on a different sample to the bulk of the nutrients are available. This data has not been updated but is the only data available and may be of interest to some users and is available as a separate file. This applies to fibre fractions, fibre analysed by the Southgate method, and sulphur.

FACTORS worksheet

Edible conversion factor (EDPOR)

Many foods are purchased or served with material that is clearly inedible or material that might be discarded as inedible by some consumers. For the purposes of this dataset, ‘waste’ encompasses both types of material, which might include, for example:

- outer leaves or stalks of vegetables
- stones, pips or peel of fruit
- nut shells
- fish skin and bone
- meat fat and bones
- liquid content of canned foods

The edible conversion factor allows calculation of the nutrient content of foods when the inedible material is included in the weight and refers to the proportion of edible material remaining after the waste has been removed. The factor will vary between different samples of the same food and these values should be treated as a guide to the typical proportion of inedible waste. In the dataset foods containing inedible portions always have ‘weighed with’ in their name.

Specific gravity (SPECGRAV)

Specific gravity is the ratio of the density (mass of a unit volume) of a food to the density (mass of the same unit volume) of water.

Nitrogen conversion factor (NCF)

Nitrogen conversion factor is the factor used to calculate protein from total nitrogen. See **Protein**.

Glycerol conversion factor (GCF)

Glycerol conversion factor is used to allow the calculation of the total fatty acids in a given weight of food. See **Fatty acids**.

PROXIMATES worksheet

Water (WATER)

For most foods, water has been analysed using gravimetric methods. In some cases where protein, fat or carbohydrate have been updated based on industry data, the water value has been estimated by calculation (100 – (protein + fat + available carbohydrate + dietary fibre + ash)).

Protein (PROT)

For most foods, protein is calculated by multiplying total nitrogen values (TOTNIT) by the factors provided in the ‘Nitrogen conversion factor’ column of the ‘Factors’ worksheet, as described in the introduction of McCance and Widdowson's The Composition of Foods seventh summary edition. Unless stated otherwise, a factor of 6.25 is used based on the assumption that proteins contain 16% nitrogen. The proportion of non-protein nitrogen is high in many foods, notably fish, fruits and vegetables. In most of these, however, this is amino acid in nature and therefore little error is involved in the use of a factor applied to the total nitrogen, although protein in the strictest sense is overestimated. For those foods which contain a measurable amount of non-protein nitrogen in the form of urea, purines and pyrimidines (for example mushrooms) the non-protein nitrogen has been subtracted before multiplication by the appropriate factor.

Fat (FAT)

The fat in most foods is a mixture of triglycerides, phospholipids, sterols and related compounds. The values in the tables refer to total fat and not just to triglycerides.

Carbohydrate (CHO)

Total carbohydrate and its components, starch, total and individual sugars (glucose, galactose, fructose, sucrose, maltose, lactose) and oligosaccharides, but not fibre, are wherever possible expressed as their monosaccharide equivalent. The values for total carbohydrate in the dataset have generally been obtained from the sum of analysed values for these components of ‘available carbohydrate’, contrasting with figures for carbohydrate ‘by difference’, which are sometimes used in other food tables or on the labels of processed foods. Such figures are obtained by subtracting the measured weights of the other proximates from the total weight and many include the contribution from any dietary fibre present, as well as errors from the other analyses.

Energy value (KCALS)

Calculated using the conversion factors: protein 4 kcal/g, fat 9 kcal/g, carbohydrate (available, expressed as monosaccharides) 3.75 kcal/g and alcohol 7 kcal/g.

Energy value (KJ)

Calculated using the conversion factors: protein 17 kJ/g, fat 37 kJ/g, carbohydrate (available, expressed as monosaccharides) 16 kJ/g and alcohol 29 kJ/g.

Starch (STAR)

Includes dextrins but excludes resistant starch. Expressed as monosaccharide equivalents.

Oligosaccharides (OLIGO)

Expressed as monosaccharide equivalents. Any known or measured contribution from oligosaccharides and/or maltodextrins has been included in the total carbohydrate value but not in the columns for starch or total sugars. In most foods oligosaccharides are present in relatively low quantities. In vegetables and some processed foods where glucose syrups and maltodextrins are added, oligosaccharides will make a significant contribution to carbohydrate content. Where oligosaccharides are present in foods, they are not always measured separately and may be included in the starch, sugar or fibre fractions, depending on the nature of the oligosaccharide and on the analytical methods used.

Total sugars (TOTSUG)

Sugars are expressed as monosaccharide equivalents and include free monosaccharides (glucose, fructose and galactose) and disaccharides (sucrose, maltose and lactose). The value does not include any contribution from oligosaccharides present in the food.

Alcohol (ALCO)

Values are given as g/100 ml. Pure ethyl alcohol has a specific gravity of 0.79, dividing values by 0.79 converts them to alcohol by volume (ml/100 ml).

NSP (ENGFIB)

Non-starch polysaccharides[2] includes insoluble fibre (cellulose, insoluble non-cellulosic polysaccharides) and soluble fibre (soluble cellulosic polysaccharides).

AOAC fibre (AOACFIB)

AOAC determinations[3] include resistant starch and lignin in the estimation of total fibre, rather than only the non-starch polysaccharides.

Fatty acids

Values for total saturated (SATFOD), monounsaturated (MONOFOD), polyunsaturated (POLYFOD) and trans fatty acids (FODTRANS) are given as well as values for branched chain saturated fatty acids (TOTBRFOD), cis-monounsaturated (MONOFODc) and cis-polyunsaturated fatty acids (POLYFODc). Trans fatty acids are also included in total monounsaturated and total polyunsaturated fatty acids. For food labelling purposes trans fats are not included in the values for monounsaturated and polyunsaturated fats. Values for total fatty acids are expressed as both g/100g food and g/100g fatty acid methyl esters. The fat in most foods contains non-fatty acid material such as phospholipids and sterols and to allow the calculation of the total fatty acids in a given weight of food, the glycerol conversion factors given in the ‘Factors’ worksheet were applied.

Cholesterol (CHOL)

Values are expressed as mg/100g food. To convert to mmol cholesterol, divide the values by 386.6.

INORGANICS worksheet

Values for are given for:

- sodium (NA)
- potassium (K)
- calcium (CA)
- magnesium (MG)
- phosphorus (P)
- iron (FE)
- copper (CU)
- zinc (ZN)
- chloride (CL)
- selenium (SE)
- iodine (I)

VITAMINS worksheet

Fat-soluble vitamins

The 2 components of vitamin A are given separately as Retinol (RET) and Carotene (CAREQU).

Retinol (RET) is expressed as the weight of *all-trans*-retinol equivalent, that is the sum of *all-trans*-retinol plus contributions from the other forms after correction to account for their relative activities.[4] Where the retinol profile was incomplete, because values for 13-*cis* retinol and/or retinaldehyde were not available, it has been assumed that only all-*trans* retinol is present, leading to a possible underestimate in some cases.

Carotene (CAREQU) represents the β-carotene activity and is the sum of the β -carotene and half of any α-carotene or cryptoxanthins present. Where the carotenoid profile was incomplete, because only values for β-carotene were available, it has been assumed that only β-carotene is present. This may result in an underestimate of β-carotene equivalents, but as α-carotene and cryptoxanthin are usually present in low levels in foods without complete carotenoid profiles, it is likely that any error is small.

Total retinol equivalent (RETEQU) The generally accepted relationship is that 6 µg β-carotene or 12 µg of other active carotenoids are equivalent to 1 µg of retinol,[5] that is:

$$\text{Vitamin A potency as retinol equivalent} = \mu\text{g retinol} + \frac{\mu\text{g β-carotene equivalent}}{6}$$

Vitamin D (VITD) Few foods contain vitamin D from intrinsic sources. All those which contain vitamin D naturally are products of animal origin and contain D_3 (cholecalciferol) derived, as in humans, from the action of sunlight on the animal's skin or from its own food. Vitamin D_2 (ergocalciferol) made commercially has the same potency as D_3 in man. Vitamin D_2 and vitamin D_3 are both used to fortify a number of foods.

Meat can contain vitamin D_3 (cholecalciferol) derived from the action of sunlight or, for pigs and poultry, from the feed. Vitamin D_3 in meat may also be present in the form of the more active 25-hydroxy vitamin D_3. For meat,

meat products, and poultry, therefore, the total vitamin D activity has been taken as the sum of vitamin D_3 (cholecalciferol) and 5 times 25-hydroxy vitamin D_3 (25-hydroxy cholecalciferol), where data is available.

Vitamin E (α-tocopherol equivalent) **(VITE)** Values take into account vitamin E activity using conversion factors[6] and are expressed as α-tocopherol equivalents.

Vitamin K_1 (VITK1) Phylloquinone, the predominant, naturally-occurring, vitamin K in foods.

Water-soluble vitamins

Thiamin (THIA) Values are expressed as thiamine chloride hydrochloride.

Niacin (NIAC) Values are the sum of nicotinic acid and nicotinamide.

Tryptophan/60 (TRYP60) Potential nicotinic acid from the amino acid tryptophan, calculated as tryptophan divided by 60.

Vitamin B_6 (VITB6) Values are expressed as pyridoxine hydrochloride by microbiological assay, or the sum of the individual forms by HPLC, and expressed as the sum of the total pyridoxine hydrochloride, pyridoxal hydrochloride and pyridoxamine dihydrochloride.

Folate (FOLT) Values are expressed as total folates measured after deconjugation of the polyglutamyl forms.

Pantothenate (PANTO) Values are expressed as calcium D-pantothenate.

Vitamin C (VITC) Values include ascorbic acid and dehydroascorbic acids.

VITAMIN FRACTIONS worksheet

Values are given for some foods for vitamers that contribute to retinol equivalents (all-trans retinol, 13-cis-retinol, dehydroretinol and retinaldehyde), carotene equivalents (alpha-carotene, beta-carotene and beta-cryptoxanthins), vitamin D (cholecalciferol and 25-hydroxy-vitamin D_3) and vitamin E equivalents (alpha, beta, gamma and delta tocopherol and alpha,

beta, gamma and delta tocotrienols). In addition, there are some values for lutein, lycopene and 5-methyl folate.

FATTY ACID worksheets

Worksheets are given containing values for individual fatty acid isomers where these are available. There are worksheets for saturated fatty acids, monounsaturated fatty acids and polyunsaturated fatty acids. Values for total fatty acids are expressed as both g/100g food and g/100g fatty acid methyl esters. The fat in most foods contains non-fatty acid material such as phospholipids and sterols and to allow the calculation of the total fatty acids in a given weight of food, the glycerol conversion factors given in the ‘Factors’ worksheet were applied.

PHYTOSTEROL worksheet

Values are given for some foods for a range of phytosterols including beta-sitosterol, brassicasterol, campesterol, delta-5-avenasterol, delta-7-avenasterol, delta-7-stigmastenol and stigmasterol.

ORGANIC ACIDS worksheet

Values are given for a few foods for citric acid and malic acid.

Food labelling

Nutrition information is increasingly being provided on food labels and has been mandatory on most pre-packed foods since 2016. Values from CoFID may be used to calculate label data.

Food information regulations (the EU Food Information for Consumers Regulation (EU FIC) No. 1169/2011), bringing EU rules on general and nutrition labelling together into a single regulation (replacing the previous food labelling regulations), came into force in November 2011. Under the regulations (available at: http://ec.europa.eu/food/food/labellingnutrition/nutritionlabel/index_en.htm), 'back of pack' nutrition labelling is mandatory for most pre-packed foods from 13 December 2016.

The mandatory declaration comprises:

- energy (kJ, kcal)
- fat
- saturates
- carbohydrate
- sugars
- protein
- salt

Salt is calculated as total sodium content multiplied by 2.5. Supplementary information on other nutrients listed in the Regulation can be provided on a voluntary basis. The additional listed nutrients are: monounsaturates; polyunsaturates; polyols; starch; fibre; and specified minerals and vitamins, present in significant amounts (as defined in the Regulation). If a claim is made for any of these nutrients, or if minerals and/or vitamins are added to a food, then the amount of the respective nutrient(s) must be declared in addition to the mandatory declaration outlined above.

Declared values for nutrients should be average values derived using 1 or more of:

- manufacturer's analysis of food

- a calculation from the known or actual average values of the ingredients used in the preparation of the food
- a calculation from generally established and accepted data

Generally established and accepted data for the UK includes values published in CoFID, if the product or its ingredients are similar to those described. Nevertheless, it is important to note that:

- protein should be given as total nitrogen x 6.25 for every food, whereas more specific factors have been used in CoFID
- carbohydrate is to be declared as the weight of the carbohydrates themselves and not their monosaccharide equivalents

The following factors may be used to convert monosaccharide equivalents from this edition to actual weights:

Total carbohydrate	Divide by 1.05 (unless it is known to be mainly starch or mainly oligosaccharide)
Starch	Divide by 1.10
Sucrose and lactose	Divide by 1.05
Glucose, etc.	As given

Different factors are to be used to calculate energy values and are shown below

	kcal/g	kJ/g
Carbohydrate (except polyols), expressed as weight	4	17
Polyols	2.4	10
Protein	4	17
Fat	9	37
Salatrims	6	25
Alcohol (ethanol)	7	29
Organic acid	3	13
Fibre	2	8
Erythritol	0	0

‘Front of pack’ nutrition labelling

EU FIC allows elements of the mandatory nutrition declaration which are of importance to public health to be repeated on the ‘front of pack’ in 1 of the following formats:

- energy value alone
- energy value plus amounts of fat, saturates, sugars and salt

Guidance on providing ‘front of pack’ labelling in line with UK government 2013 recommendation can be found at: www.gov.uk/government/publications/front-of-pack-nutrition-labelling-guidance

Tolerances for nutrient values declared on a label

It is widely recognised that it is not possible for foods to always contain the exact quantity of nutrients declared on the label, owing to natural variation, and variations during food production and storage. However, to avoid consumers being misled, it is important that the deviation from declared values should be minimal. EU guidance has therefore been produced on tolerances, that is the acceptable differences between the nutrient values declared on a label and those established during official controls by enforcement authorities. The tolerances, which vary by nutrient, by the amount present and take account of the uncertainty of measurement, are at: http://ec.europa.eu/food/food/labellingnutrition/nutritionlabel/index_en.htm

Appendix A: Main data references

Publications in The Composition of Foods series

McCance, R.A. and Widdowson, E.M. (1960) The Composition of Foods, 3rd edition. Her Majesty's Stationery Office, London

Paul, A.A. and Southgate, D.A.T. (1978) McCance and Widdowson's The Composition of Foods, 4th edition. Her Majesty's Stationery Office, London

Holland, B., Unwin, I.D. and Buss, D.H. (1988) Cereals and Cereal Products. Third supplement to 4th edition of McCance and Widdowson's The Composition of Foods. The Royal Society of Chemistry, Nottingham

Holland, B., Unwin, I.D. and Buss, D.H. (1989) Milk Products and Eggs. Fourth supplement to 4th edition of McCance and Widdowson's The Composition of Foods. The Royal Society of Chemistry, Cambridge

Holland, B., Unwin, I.D. and Buss, D.H. (1991) Vegetables, Herbs and Spices. Fifth supplement to 4th edition of McCance and Widdowson's The Composition of Foods. The Royal Society of Chemistry, Cambridge

Holland, B., Welch, A.A., Unwin, I.D., Buss, D.H., Paul, A.A. and Southgate, D.A.T. (1991) McCance and Widdowson's The Composition of Foods, 5th edition. The Royal Society of Chemistry, Cambridge

Holland, B., Unwin, I.D. and Buss, D.H. (1992) Fruit and Nuts. First supplement to 5th edition of McCance and Widdowson's The Composition of Foods. The Royal Society of Chemistry, Cambridge

Holland, B., Welch, A.A. and Buss, D.H. (1992) Vegetable Dishes. Second supplement to 5th edition of McCance and Widdowson's The Composition of Foods. The Royal Society of Chemistry, Cambridge

Holland, B., Brown, J. and Buss, D.H. (1993) Fish and Fish Products. Third supplement to 5th edition of McCance and Widdowson's The Composition of Foods. The Royal Society of Chemistry, Cambridge

Chan, W., Brown, J. and Buss, D.H. (1994) Miscellaneous Foods. Fourth supplement to 5th edition of McCance and Widdowson's The Composition of Foods. The Royal Society of Chemistry, Cambridge

Chan, W., Brown, J., Lee, S.M. and Buss, D.H. (1995) Meat, Poultry and Game. Fifth supplement to 5th edition of McCance and Widdowson's The Composition of Foods. The Royal Society of Chemistry, Cambridge

Chan, W., Brown, J., Church, S.M. and Buss, D.H. (1996) Meat Products and Dishes. Sixth supplement to 5th edition of McCance and Widdowson's The Composition of Foods. The Royal Society of Chemistry, Cambridge

Ministry of Agriculture, Fisheries and Food. (1998) Fatty Acids. Seventh supplement to 5th edition of McCance and Widdowson's The Composition of Foods. The Royal Society of Chemistry, Cambridge.

Food Standards Agency (2002) McCance and Widdowson's The Composition of Foods, 6th summary edition. The Royal Society of Chemistry, Cambridge

Finglas P.M, Roe M.A., Pinchen H.M, Berry R., Church S.M., Dodhia S.K., Farron-Wilson M. and Swan G. (2015) McCance and Widdowson's The Composition of Foods, Seventh summary edition. The Royal Society of Chemistry, Cambridge

Composition of Foods Integrated Dataset (2008) http://tna.europarchive.org/20110116113217/http://www.food.gov.uk/science/dietarysurveys/dietsurveys/

Composition of Foods Integrated Dataset (2015)

https://www.gov.uk/government/publications/composition-of-foods-integrated-dataset-cofid

Analytical reports

Laboratory of the Government Chemist (1982-1983) Carcase meat and offal survey

Laboratory of the Government Chemist (1983-1984) Alcoholic beverages, soft drinks and tea and coffee survey

Laboratory of the Government Chemist (1983-1984) Poultry and game surveys

Laboratory of the Government Chemist (1984) The nutritional composition of fruit juice

Institute of Food Research (1984-1987) The nutritional composition of retail vegetables in the UK

Laboratory of the Government Chemist (1985) Canned and other processed vegetable products survey

Laboratory of the Government Chemist (1985) Frozen vegetable survey

Laboratory of the Government Chemist (1985-1986) Nutritional composition of fruit products

Laboratory of the Government Chemist (1985-1986) Nutritional composition of fresh fruit

Laboratory of the Government Chemist (1986-1987) Fish and fish products

Laboratory of the Government Chemist (1989) Dairy products and eggs

Laboratory of the Government Chemist (1989-1990) Fruit and vegetables

Laboratory of the Government Chemist (1990-1991) Analytical survey of meat products

Laboratory of the Government Chemist (1992) Analytical survey of confectionery items

Laboratory of the Government Chemist (1992) Nutritional analysis of foods for pre-school children

Leatherhead Food R.A. (1992) Nutrient analysis of miscellaneous foods

Laboratory of the Government Chemist (1992-1993) Nutrient analysis of carcase beef

Laboratory of the Government Chemist (1992-1993) Nutrient analysis of retail cuts of pork

Leatherhead Food R.A. (1993) Nutritional analysis of soft drinks

Laboratory of the Government Chemist (1993) Survey of the Nutritional Composition of savoury snacks and nuts

RHM Research and Engineering Ltd (1993) Fatty acids in foods

Laboratory of the Government Chemist (1993-1994) Nutrient analysis of retail cuts of bacon

Laboratory of the Government Chemist (1993-1994) Nutrient analysis of retail cuts of lamb

Laboratory of the Government Chemist (1994) Analysis of assorted foods

Laboratory of the Government Chemist (1994) Nutrient analysis of foods important in elderly people

Laboratory of the Government Chemist (1994-1995) Nutrient analysis of chicken and turkey

Laboratory of the Government Chemist (1994-1995) Nutritional analysis of meat and poultry products

Laboratory of the Government Chemist (1995) Added folic acid in supplements and fortified foods

Laboratory of the Government Chemist (1995) Nutrient analysis of foods commonly consumed by schoolchildren

RHM Technology (1995) Nutrient analysis of pizzas

RHM Technology (1995) Nutrient analysis of selected foods

ADAS Laboratory Services (1995-1996) Nutrient analysis of pasteurised liquid milk

Laboratory of the Government Chemist (1996) Individual folates in foodstuffs

Aspland and James Ltd (1997) Nutrient analysis of ethnic takeaway foods

Laboratory of the Government Chemist (1997) Determination of 25-OH vitamin D in selected foodstuffs

Laboratory of the Government Chemist (1997) Determination of cis carotenoids in foodstuffs

Laboratory of the Government Chemist (1997) The determination of different forms of iron in foodstuffs

RHM Technology (1997) Nutrient analysis of manufactured foods for vegetarians

Laboratory of Government Chemist (1998) Nutrient analysis of 'other' milk and cream

Campden and Chorleywood Food Research Association (1998) Nutrient analysis of yoghurts, fromage frais and chilled desserts

Laboratory of the Government Chemist (1999) Nutrient analysis of bread and morning goods

Laboratory of the Government Chemist (1999) Nutrient analysis of cheese

ADAS Laboratories (1999) Nutrient analysis of ice creams and desserts

Campden and Chorleywood Food Research Association (2003) Programme of mini-surveys: survey of sausages

Direct Laboratories (2003) Nutrient analysis catch up project

Laboratory of the Government Chemist (2004) Nutrient analysis of pasta and pasta sauces

Laboratory of the Government Chemist (2004) Nutrient survey of breakfast cereals

Laboratory of the Government Chemist (2005) Nutrient survey of flours and grains

University of Leeds (2007) Nutritional analysis of commonly consumed South Asian foods in the UK

Department of Health (2011) Nutrient analysis survey of biscuits, buns, cakes and pastries

Department of Health (2012) Nutrient analysis of eggs

Department of Health (2013) Nutrient analysis of a range of processed foods with particular reference to trans fatty acids, revised version

Department of Health (2013) Nutrient analysis of fish and fish products

Department of Health (2013) Nutrient analysis of fruit and vegetables

Public Health England (2015) Nutrient analysis of fruit and vegetables

Scientific literature

Bolton-Smith, C., Price, R.J.G., Fenton, S.T., Harrington, D.J. and Shearer, M.J. (2000) Compilation of a provisional UK database for the phylloquinone (vitamin K1) content of foods. Br. J. Nutr. 83, 389-399

Caribbean Food and Nutrition Institute (1974) Food composition tables for use in the English speaking Caribbean. Unwin Brothers, Woking

Cashel, K., English, R. and Lewis, J. (1989) Composition of Foods, Australia. Volume 1. Department of Community Services and Health, Canberra

Chughtai, M.I.D. and Khan, A. (1960) Nutritive value of food-stuffs and planning of satisfactory diets in Pakistan, Part 1. Composition of raw food-stuffs, Punjab University Press, Lahore

Cutrufelli, R. and Matthews, R.H. (1986) Composition of foods: beverages, raw, processed and prepared. Agriculture Handbook No. 8-14, US Department of Agriculture, Washington DC

Cutrufelli, R. and Pehrsson, P.R. (1991) Composition of foods: snacks and sweets, raw, processed and prepared. Agriculture Handbook No. 8-19, US Department of Agriculture, Washington DC

Department of Health and Social Security (1977) The composition of mature human milk. Report on Health and Social Subjects No 12, HMSO, London

Department of Health (1991) Dietary reference values for food energy and nutrients for the United Kingdom. Report on Health and Social Subjects No. 41, HMSO, London

Exler, J. (1987) Composition of foods: finfish and shellfish products, raw, processed and prepared, Agriculture Handbook No 8-15, US Department of Agriculture, Washington DC

Gebhardt, S.E., Cutrufelli, R. and Matthews, R.H. (1982) Composition of foods: fruits and fruit juices, raw, processed and prepared, Agriculture Handbook No 8-9, US Department of Agriculture, Washington DC

Gopalan, C., Rama Sastri, B.V. and Balasubramanian, S.C. (1980) Nutritive value of Indian foods, National Institute of Nutrition, Indian Council of Medical Research, Hyderabad

Haytowitz, D.B. and Matthews, R.H. (1986) Composition of foods: legumes and legume products, raw, processed and prepared. Agriculture Handbook No. 8-11, US Department of Agriculture, Washington DC

Lewis, J. and English, R. (1990) Composition of foods, Australia. Volume 5, nuts and legumes, beverages, miscellaneous foods. Department of Community Services and Health, Canberra

Marsh, A.C., Moss, M.K. and Murphy, E.W. (1977) Composition of foods: spices and herbs, raw, processed and prepared. Agriculture Handbook No. 8-2, US Department of Agriculture, Washington, Washington DC

McCarthy, M.A. and Matthews, R.H. (1984) Composition of foods: nut and seed products, raw, processed and prepared. Agriculture Handbook No. 8-12, US Department of Agriculture, Washington DC

Polacchi, W., McHargue, J.S. and Perloff, B.P. (1982) Food composition tables for the near east, Food and Agriculture Organization of the United Nations, Rome

Posati, L.P. and Orr, M.L. (1976) Composition of foods, dairy and egg products, raw, processed and prepared, Agriculture Handbook No. 8-1, US Department of Agriculture, Washington DC

U.S. Department of Agriculture, Agricultural Research Service. (2013) USDA National Nutrient Database for Standard Reference, Release 26. Nutrient Data Laboratory Home Page, http://www.ars.usda.gov/ba/bhnrc/ndl

Visser, F.R. and Burrows, J.K. (1983) Composition of New Zealand foods. 1, characteristic fruits and vegetables. DSIR Bulletin 235, New Zealand Department of Scientific and industrial Research, Wellington

Wharton, P.A., Eaton, P.M. and Day, K.C. (1983) Sorrento Asian food tables: food tables, recipes and customs of mothers attending Sorrento Maternity Hospital, Birmingham, England. Hum. Nutr. Appli. Nutr., 37A, 378-402

Wu Leung, W.T., Butrum, R.R., Chang, F.H., Narayama Rao, M. and Polacchi, W. (1972) Food composition table for use in East Asia, Food and Agriculture Organization and US Department of Health, Education and Welfare, Bethesda

Appendix B: Food sub-group codes

Cereals and cereal products	**A**
Flours, grains and starches	AA
Sandwiches	AB
Rice	AC
Pasta	AD
Pizzas	AE
Breads	AF
Rolls	AG
Breakfast cereals	AI
Infant cereal foods	AK
Biscuits	AM
Cakes	AN
Pastry	AO
Buns and pastries	AP
Puddings	AS
Savouries	AT
Milk and milk products	**B**
Cows milk	BA
Breakfast milk	BAB
Skimmed milk	BAE
Semi-skimmed milk	BAH
Whole milk	BAK
Channel Island milk	BAN
Processed milks	BAR
Other milks	BC
Infant formulas	BF
Whey-based modified milks	BFD
Non-whey-based modified milks	BFG
Soya-based modified milks	BFJ
Follow-on formulas	BFP
Milk-based drinks	BH

Creams	BJ
Fresh creams (pasteurised)	BJC
Frozen creams (pasteurised)	BJF
Sterilised creams	BJL
UHT creams	BJP
Imitation creams	BJS
Cheeses	BL
Yogurts	BN
Whole milk yogurts	BNE
Low fat yogurts	BNH
Other yogurts	BNS
Ice creams	BP
Puddings and chilled desserts	BR
Savoury dishes and sauces	BV

Eggs C

Eggs	CA
Egg dishes	CD
Savoury egg dishes	CDE
Sweet egg dishes	CDH

Vegetables D

Potatoes	DA
Early potatoes	DAE
Main crop potatoes	DAM
Chipped old potatoes	DAP
Potato products	DAR
Beans and lentils	DB
Peas	DF
Vegetables, general	DG
Vegetables, dried	DI
Vegetable dishes	DR

Fruit	**F**
Fruit, general	FA
Fruit juices	FC
Nuts and seeds	**G**
Nuts and seeds, general	GA
Herbs and spices	**H**
Fish and fish products	**J**
White fish	JA
Fatty fish	JC
Crustacea	JK
Molluscs	JM
Fish products and dishes	JR
Meat and meat products	**M**
Meat	MA
Bacon	MAA
Beef	MAC
Lamb	MAE
Pork	MAG
Veal	MAI
Poultry	MC
Chicken	MCA
Duck	MCC
Goose	MCE
Grouse	MCG
Partridge	MCI
Pheasant	MCK
Pigeon	MCM
Turkey	MCO
Game	ME
Hare	MEA
Rabbit	MEC

Venison	MEE
Offal	MG
Burgers and grillsteaks	MBG
Meat products	MI
Other meat products	MIG
Meat dishes	MR
Fats and oils	**O**
Spreading fats	OA
Animal fats	OB
Oils	OC
Non-animal fats	OE
Cooking fats	OF
Beverages	**P**
Powdered drinks, essences and infusions	PA
Powdered drinks and essences	PAA
Infusions	PAC
Soft drinks	PC
Carbonated drinks	PCA
Squash and cordials	PCC
Juices	PE
Alcoholic beverages	**Q**
Beers	QA
Ciders	QC
Wines	QE
Fortified wines	QF
Vermouths	QG
Liqueurs	QI
Spirits	QK
Sugars, preserves and snacks	**S**
Sugars, syrups and preserves	SC
Confectionery	SE

Chocolate confectionery	SEA
Non-chocolate confectionery	SEC
Savoury snacks	SN
Potato-based snacks	SNA
Potato and mixed cereal snacks	SNB
Non-potato snacks	SNC
Soups, sauces and miscellaneous foods	**W**
Soups	WA
Homemade soups	WAA
Canned soups	WAC
Packet soups	WAE
Sauces	WC
Dairy sauces	WCD
Salad sauces, dressings and pickles	WCG
Non-salad sauces	WCN
Pickles and chutneys	WE
Miscellaneous foods	WY

Appendix C: Acronyms, descriptions and units

Acronym	Description	Units
13CISRET	13-cis-retinol	µg
25OHD3	25-hydroxy vitamin D3	µg
5METHF	5-methyl folate	µg
ACAR	Alpha-carotene	µg
ALCO	Alcohol	g
ALTRET	All-trans-retinol	µg
AOACFIB	AOAC fibre	g
ATOPH	Alpha-tocopherol	mg
ATOTR	Alpha-tocotrienol	mg
BCAR	Beta-carotene	µg
BIOT	Biotin	µg
BRASPHYTO	Brassicasterol	mg
BSITPHYTO	Beta-sitosterol	mg
BTOPH	Beta-tocopherol	mg
BTOPH	Beta-tocopherol	mg
CA	Calcium	mg
CAMPHYTO	Campesterol	mg
CAREQU	Carotene	µg
CHO	Carbohydrate	g
CHOL	Cholesterol	mg
CITA	Citric acid	g
CL	Chloride	mg
COMM	Comments and data source	
CRYPYT	Cryptoxanthins	µg
CU	Copper	mg
D5AVEN	Delta-5-avenasterol	mg
D7AVEN	Delta-7-avenasterol	mg
D7STIG	Delta-7-stigmastenol	mg
DEHYRET	Dehydroretinol	µg
DESC	Food description	
DTOPH	Delta-tocopherol	mg
EDPOR	Edible proportion	
ENGFIB	Englyst fibre	g
FAC10:0	Decanoic acid per 100g fatty acids	g
FAC10:1	Decenoic acid per 100g fatty acids	g
FAC10:1c	cis-Decenoic acid per 100g fatty acids	g

FAC11:0xb	ex Br Undecanoic acid per 100g fatty acids	g
FAC12:0	Dodecanoic acid per 100g fatty acids	g
FAC12:0xb	ex Br Dodecanoic acid per 100g fatty acids	g
FAC12:1	Dodecenoic acid per 100g fatty acids	g
FAC12:1c	cis-Dodecenoic acid per 100g fatty acids	g
FAC13:0xb	ex Br Tridecanoic acid	g
FAC14:0	Tetradecanoic acid per 100g fatty acids	g
FAC14:0xb	ex Br Tetradecanoic acid per 100g fatty acids	g
FAC14:1	Tetradecenoic acid per 100g fatty acids	g
FAC14:1c	cis-Tetradecenoic acid per 100g fatty acids	g
FAC15:0	Pentadecanoic acid per 100g fatty acids	g
FAC15:0xb	ex Br Pentadecanoic acid per 100g fatty acids	g
FAC15:1	Pentadecenoic acid per 100g fatty acids	g
FAC15:1c	cis-Pentadecenoic acid per 100g fatty acids	g
FAC16 poly	unknown C16 polyunsaturated fatty acids per 100g fatty acid	g
FAC16:0	Hexadecanoic acid per 100g fatty acids	g
FAC16:0xb	ex Br Hexadecanoic acid per 100g fatty acids	g
FAC16:1	Hexadecenoic acid per 100g fatty acids	g
FAC16:1c	cis-Hexadecenoic acid per 100g fatty acids	g
FAC16:2c	cis-Hexadecadienoic acid per 100g fatty acids	g
FAC16:3c	cis-Hexadecatrienoic acid per 100g fatty acids	g
FAC16:4	Hexadecatetraenoic acid per 100g fatty acids	g
FAC16:4c	cis-Hexadecatetraenoic acid per 100g fatty acids	g
FAC17:0	Heptadecanoic acid per 100g fatty acids	g
FAC17:0xb	ex Br Heptadecanoic acid per 100g fatty acids	g
FAC17:1	Heptadecenoic acid per 100g fatty acids	g
FAC17:1c	cis-Heptadecenoic acid per 100g fatty acids	g
FAC18 poly	unknown C18 polyunsaturated fatty acids per 100 fatty acid	g
FAC18:0	Octadecanoic acid per 100g fatty acids	g
FAC18:0xb	ex Br Octadecanoic acid per 100g fatty acids	g
FAC18:1	Octadecenoic acid per 100g fatty acids	g
FAC18:1c	cis-Octadecenoic acid per 100g fatty acids	g
FAC18:1n7	n-7 Octadecenoic acid per 100g fatty acids	g
FAC18:1n9	n-9 Octadecenoic acid per 100g fatty acids	g
FAC18:2	Octadecadienoic acid per 100g fatty acids	g
FAC18:2cn6	cis n-6 Octadecadienoic acid per 100g fatty acids	g
FAC18:3	Octadecatrienoic acid per 100g fatty acids	g
FAC18:3cn3	cis n-3 Octadecatrienoic acid per 100g fatty acids	g
FAC18:3cn6	cis n-6 Octadecatrienoic acid per 100g fatty acids	g
FAC18:4	Octadecatetraenoic acid per 100g fatty acids	g
FAC18:4cn3	cis n-3 Octadecatetraenoic acid per 100g fatty acids	g

FAC20 poly	unknown C20 polyunsaturated fatty acid per 100 fatty acid	g
FAC20:0	Eicosanoic acid per 100g fatty acids	g
FAC20:0xb	ex Br Eicosanoic acid per 100g fatty acids	g
FAC20:1	Eicosenoic acid per 100g fatty acids	g
FAC20:1c	cis-Eicosenoic acid per 100g fatty acids	g
FAC20:2	Eicosadienoic acid per 100g fatty acids	g
FAC20:2cn6	cis n-6 Eicosadienoic acid per 100g fatty acids	g
FAC20:3	Eicosatrienoic acid per 100g fatty acids	g
FAC20:3cn6	cis n-6 Eicosatrienoic acid per 100g fatty acids	g
FAC20:4	Eicosatetraenoic acid per 100g fatty acids	g
FAC20:4cn6	cis n-6 Eicosatetraenoic acid per 100g fatty acids	g
FAC20:5	Eicosapentaenoic acid per 100g fatty acids	g
FAC20:5cn3	cis n-3 Eicosapentaenoic acid per 100g fatty acids	g
FAC21:5	Heneicosapentaenoic acid per 100g fatty acids	g
FAC21:5cn3	cis n-3 Heneicosapentaenoic acid per 100g fatty acids	g
FAC22 poly	unknown C22 polyunsaturated fatty acid per 100g fatty acid	g
FAC22:0	Docosanoic acid per 100g fatty acids	g
FAC22:0xb	ex Br Docosanoic acid per 100g fatty acids	g
FAC22:1	Docosenoic acid per 100g fatty acids	g
FAC22:1c	cis-Docosenoic acid per 100g fatty acids	g
FAC22:1n11	n-11 Docosenoic acid per 100g fatty acids	g
FAC22:1n9	n-9 Docosenoic acid per 100g fatty acids	g
FAC22:2	Docosadienoic acid per 100g fatty acids	g
FAC22:2cn6	cis n-6 Docosadienoic acid per 100g fatty acids	g
FAC22:3cn6	cis n-6 Docosatriienoic acid per 100g fatty acids	g
FAC22:4	Docosatetraenoic acid per 100g fatty acids	g
FAC22:4cn6	cis n-6 Docosatetraenoic acid per 100g fatty acids	g
FAC22:5	Docosapentaenoic acid per 100g fatty acids	g
FAC22:5cn3	cis n-3 Docosapentaenoic acid per 100g fatty acids	g
FAC22:6	Docosahexaenoic acid (DHA) per 100g fatty acids	g
FAC22:6cn3	cis n-3 Docosahexaenoic acid (DHA) per 100g FA	g
FAC24:0	Tetracosanoic acid per 100g fatty acids	g
FAC24:0xb	ex Br Tetracosanoic acid per 100g fatty acids	g
FAC24:1	Tetracosenoic acid per 100g fatty acids	g
FAC24:1c	cis-Tetracosenoic acid per 100g fatty acids	g
FAC25:0xb	ex Br Pentacosanoic acid per 100g fatty acids	g
FAC4:0	Butanoic acid per 100g fatty acids	g
FAC6:0	Hexanoic acid per 100g fatty acids	g
FAC8:0	Octanoic acid per 100g fatty acids	g
FACTRANS	Total Trans fatty acids per 100g fatty acids	g

FAT	Fat	g
FE	Iron	mg
FOD10:0	Decanoic acid per 100g food	g
FOD10:1	Decenoic acid per 100g food	g
FOD10:1c	cis-Decenoic acid per 100g food	g
FOD11:0xb	ex Br Undecanoic acid per 100g food	g
FOD12:0	Dodecanoic acid per 100g food	g
FOD12:0xb	ex Br Dodecanoic acid per 100g food	g
FOD12:1	Dodecenoic acid per 100g food	g
FOD12:1c	cis-Dodecenoic acid per 100g food	g
FOD13:0	Tridecanoic acid per 100g food	g
FOD13:0xb	ex Br Tridecanoic acid per 100g food	g
FOD14:0	Tetradecanoic acid per 100g food	g
FOD14:0xb	ex Br Tetradecanoic acid per 100g food	g
FOD14:1	Tetradecenoic acid per 100g food	g
FOD14:1c	cis-Tetradecenoic acid per 100g food	g
FOD15:0	Pentadecanoic acid per 100g food	g
FOD15:0xb	ex Br Pentadecanoic acid per 100g food	g
FOD15:1	Pentadecenoic acid per 100g food	g
FOD15:1c	cis-Pentadecenoic acid per 100g food	g
FOD16 poly	unknown C16 polyunsaturated fatty acids per 100g food	g
FOD16:0	Hexadecanoic acid per 100g food	g
FOD16:0xb	ex Br Hexadecanoic acid per 100g food	g
FOD16:1	Hexadecenoic acid per 100g food	g
FOD16:1c	cis-Hexadecenoic acid per 100g food	g
FOD16:2	Hexadecadienoic acid per 100g food	g
FOD16:2c	cis-Hexadecadienoic acid per 100g food	g
FOD16:3	Hexadecatrienoic acid per 100g food	g
FOD16:4	Hexadecatetraenoic acid per 100g food	g
FOD16:4c	cis-Hexadecatetraenoic acid per 100g food	g
FOD16:UNID	16:unidentified fatty acid per 100g food	g
FOD17:0	Heptadecanoic acid per 100g food	g
FOD17:0xb	ex Br Heptadecanoic acid per 100g food	g
FOD17:1	Heptadecenoic acid per 100g food	g
FOD17:1c	cis Heptadecenoic acid per 100g food	g
FOD18 poly	unknown C18 polyunsaturated fatty acid per 100g food	g
FOD18:0	Octadecanoic acid per 100g food	g
FOD18:0xb	ex Br Octadecanoic acid per 100g food	g
FOD18:1	Octadecenoic acid per 100g food	g
FOD18:1c	cis-Octadecenoic acid per 100g food	g
FOD18:1n7	n-7 Octadecenoic acid per 100g food	g

FOD18:1n9	n-9 Octadecenoic acid per 100g food	g
FOD18:2	Octadecadienoic acid per 100g food	g
FOD18:2cn6	cis n-6 Octadecadienoic acid per 100g food	g
FOD18:3	Octadecatrienoic acid per 100g food	g
FOD18:3cn3	cis n-3 Octadecatrienoic acid per 100g food	g
FOD18:3cn6	cis n-6 Octadecatrienoic acid per 100g food	g
FOD18:4	Octadecatetraenoic acid per 100g food	g
FOD18:4cn3	cis n-3 Octadecatetraenoic acid per 100g food	g
FOD19:0	Nonadecanoic acid per 100g food	g
FOD20 poly	unknown C20 polyunsaturated fatty acid per 100g food	g
FOD20:0	Eicosanoic acid per 100g food	g
FOD20:0xb	ex Br Eicosanoic acid per 100g food	g
FOD20:1	Eicosenoic acid per 100g food	g
FOD20:1c	cis-Eicosenoic acid per 100g food	g
FOD20:2	Eicosadienoic acid per 100g food	g
FOD20:2cn6	cis n-6 Eicosadienoic acid per 100g food	g
FOD20:3	Eicosatrienoic acid per 100g food	g
FOD20:3cn6	cis n-6 Eicosatrienoic acid per 100g food	g
FOD20:4	Eicosatetraenoic acid per 100g food	g
FOD20:4cn6	cis n-6 Eicosatetraenoic acid per 100g food	g
FOD20:5	Eicosapentaenoic acid per 100g food	g
FOD20:5cn3	cis n-3 Eicosapentaenoic acid per 100g food	g
FOD21:5	Heneicosapentaenoic acid per 100g food	g
FOD21:5cn3	cis n-3 Heneicosapentaenoic acid per 100g food	g
FOD22 poly	unknown polyunsaturated fatty acid per 100g food	g
FOD22:0	Docosanoic acid per 100g food	g
FOD22:0xb	ex Br Docosanoic acid per 100g food	g
FOD22:1	Docosenoic acid per 100g food	g
FOD22:1c	cis-Docosenoic acid per 100g food	g
FOD22:1n11	n-11 Docosenoic acid per 100g food	g
FOD22:1n9	n-9 Docosenoic acid per 100g food	g
FOD22:2	Docosadienoic acid per 100g food	g
FOD22:2cn6	cis n-6 Docosadienoic acid per 100g food	g
FOD22:3cn6	cis n-6 Docosatrienoic acid per 100g food	g
FOD22:4	Docosatetraenoic acid per 100g food	g
FOD22:4cn6	cis n-6 Docosatetraenoic acid per 100g food	g
FOD22:5	Docosapentaenoic acid per 100g food	g
FOD22:5cn3	cis n-3 Docosapentaenoic acid per 100g food	g
FOD22:6	Docosahexaenoic acid (DHA) per 100g food	g
FOD22:6cn3	cis n-3 Docosahexaenoic acid (DHA) per 100g food	g
FOD24:0	Tetracosanoic acid per 100g food	g
FOD24:0xb	ex Br Tetracosanoic acid per 100g food	g

FOD24:1	Tetracosenoic acid per 100g food	g
FOD24:1c	cis-Tetracosenoic acid per 100g food	g
FOD25:0xb	ex Br Pentacosanoic acid per 100g food	g
FOD4:0	Butanoic acid per 100g food	g
FOD6:0	Hexanoic acid per 100g food	g
FOD8:0	Octanoic acid per 100g food	g
FODTRANS	Trans fatty acids per 100g food	g
FOLT	Folate	µg
FRUCT	Fructose	g
GALACT	Galactose	g
GLUC	Glucose	g
GROUP	Food sub-group code	
GTOPH	Gamma-tocopherol	mg
GTOTR|	Gamma-tocotrienol	mg
I	Iodine	µg
K	Potassium	mg
KCALS	kcal	
KJ	kJ	
LACT	Lactose	g
LUT	Lutein	µg
LYCO|	Lycopene	µg
MALA	Malic acid	g
MALT	Maltose	g
MG	Magnesium	mg
MN	Manganese	mg
MONOFAC	Monounsaturated fatty acids per 100g fatty acids	g
MONOFACc	cis-Monounsaturated fatty acids /100g FA	g
MONOFACtr	trans monounsaturated fatty acids per 100 FA	g
MONOFOD	Monounsaturated fatty acids per 100g food	g
MONOFODc	cis-Monounsaturated fatty acids /100g Food	g
MONOFODtr	trans monounsaturated fatty acids per 100g food	g
NA	Sodium	mg
NAME	Full food name (including any preparation details)	
NCF	Nitrogen conversion factor	
NIAC	Niacin	mg
NIACEQU	Niacin equivalent	mg
NUMB	Food number	
OLIGO	Oligosaccharide	g
Other CHOL and PHYTO	Other Cholesterol and Phytosterols	mg
P	Phosphorus	mg
PANTO	Pantothenate	mg
PHYTO	Phytosterol	mg

POLYFAC	Polyunsaturated fatty acids per 100g fatty acids	g
POLYFACc	cis-Polyunsaturated fatty acids /100g FA	g
POLYFACtr	trans polyunsatsaturated fatty acid per 100g fatty acid	g
POLYFOD	Polyunsaturated fatty acids per 100g food	g
POLYFODc	cis-Polyunsaturated fatty acids /100g Food	g
POLYFODtr	trans polyunsaturated fatty acid per 100g food	g
PREV	Previous food number	
PROT	Protein	g
RET	Retinol	µg
RETALD	Retinaldehyde	µg
RETEQU	Total retinol equivalent	µg
RIBO	Riboflavin	mg
SATFAC	Saturated fatty acids per 100g fatty acids	g
SATFACx6	Saturated fatty acids excluding branch per 100 g fatty acid	g
SATFOD	Saturated fatty acids per 100g food	g
SATFODx6	Saturated fatty acids excluding branch per 100 g food	g
SE	Selenium	µg
SOLD	Total solids	g
SPECGRAV	Specific gravity	
STAR	Starch	g
STIGPHYTO	Stigmasterol	mg
SUCR	Sucrose	g
THIA	Thiamin	mg
Total PHYTO	Total Phytosterols	mg
TOTBRFAC	Total branched chain per 100g fatty acid	g
TOTBRFOD	Total branched chain per 100g food	g
TOTn3PFAC	Total n-3 polyunsaturated fatty acids per 100g fatty acid	g
TOTn3PFOD	Total n-3 polyunsaturated fatty acids per 100g food	g
TOTn6PFAC	Total n-6 polyunsaturated fatty acids per 100g fatty acid	g
TOTn6PFOD	Total n-6 polyunsaturated fatty acids per 100g food	g
TOTNIT	Total nitrogen	g
TOTSUG	Total sugars	g
TRYP60	Tryptophan divided by 60	mg
VITB12	Vitamin B12	µg
VITB6	Vitamin B6	mg
VITC	Vitamin C	mg
VITD	Vitamin D	µg
VITD3	Cholecalciferol	µg

VITE	Vitamin E	mg
VITK1	Phylloquinone	µg
WATER	Water	g
ZN	Zinc	mg

References

[1]Finglas PM, Roe MA, Pinchen HM, Berry R, Church SM, Dodhia SK et al. McCance and Widdowson's The Composition of Foods, Seventh summary edition. Cambridge: Royal Society of Chemistry. 2015

[2] Englyst HN, Quigley ME, Hudson GJ. Determination of dietary fibre as non-starch polysaccharides with gas–liquid chromatographic, high performance liquid chromatographic or spectrophotometric measurement of constituent sugars. Analyst. 1994; 119, 1497–1509

[3] Horwitz W, Latimer G. Official methods of analysis of AOAC international. 4. Rev. Gaithersburg: AOAC International. 2011

[4] Sivell LM, Bull NL, Buss DH, Wiggins RA, Scuffam D, Jackson PA. Vitamin A activity in foods of animal origin. J Sci Food Agric. 1984; 35 (8), 931-939

[5] Department of Health. Dietary reference values for food energy and nutrients for the United Kingdom. Report on Health and Social Subjects No. 41, London: HMSO. 1991

[6] McLaughlin PJ, Weihrauch JL. Vitamin E content of foods. J Am Diet Assoc. 1979; 75 (6), 647-665