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CANADIAN NUTRIENT FILE

compilation of Canadian food composition data

USERS' GUIDE
2015

Canada

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To obtain additional information, please contact:

Health Canada
Address Locator 0900C2
Ottawa, ON K1A 0K9
Tel.: 613-957-2991
Toll free: 1-866-225-0709
Fax: 613-941-5366
TTY: 1-800-465-7735
E-mail: publications@hc-sc.gc.ca

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Prepared by:

Josephine Deeks
Marie-France Verreault
Rita Klutka
Winnie Cheung

of the
Canadian Nutrient File
Nutrition Research Division
Food Directorate
Health Products and Foods Branch
Health Canada

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INTRODUCTION

The Canadian Nutrient File (CNF) is a computerized, bilingual food composition database containing average values for nutrients in foods available in Canada.

Much of the data in the CNF have been derived from the comprehensive United States Department of Agriculture (USDA) National Nutrient Database for Standard Reference, up to and including standard release 27.[1]

Foods included in the USDA database that are known not to be on the Canadian market are excluded.

Modification for Canadian levels of fortification and regulatory standards,[2] along with addition of Canadian only foods or Canadian commodity data, as well as where appropriate, some brand name foods, forms this standard Canadian resource.

This manual is a technical document meant to guide clients using the CNF:

- appropriate uses of the data;
- technical definitions of the nutrients;
- background on the sources and quality of the data and,
- changes specific to this 2015 edition.

For clients accessing the online searchable site and needing additional help specific to navigating the site itself, please read carefully the instructions on the search screens. Refer to the search guide located on the search page. Alternatively please contact the Canadian Nutrient File team.

Food Directorate
251 Sir Frederick Banting Driveway
Postal Locator 2203E
Tunney's Pasture Ottawa, Ontario K1A 0K9

Email: cnfusers@hc-sc.gc.ca

Some of the features discussed in this document are not available in the online version (i.e. food group codes, USDA source codes, etc.) and are only available through downloading the full version files.

For more detail on the structure of the relational files, please consult the Database Structure Guide.

NEW FOR THIS EDITION

This is the thirteenth edition of the Canadian Nutrient File and contains data on 5690 food items for up to 152 food components. Since the October 2010 release the following modifications have been made to the database:

1. Canadian Sampling and Nutrient Analysis Program (SNAP-CAN)

In 2007 the Sampling and Nutrient Analysis Program of Canadian foods was initiated. Under this program, priority foods are chosen, sample designs are implemented and the samples are analyzed for a comprehensive set of nutrients by Health Canada regional laboratories. Scarce resources for the time being, limit us to only considering the very highest priority foods for this program. These are chosen based on:

- the amounts consumed by Canadians; staple foods are high priorities;
- strong evidence that the Canadian product is very different from the US;
- recent reformulation due to market forces;
- lack of data for foods often cited in national nutrition surveys; and
- a final consideration is the degree to which a cost saving collaboration with a food industry sector will benefit the CNF. This usually involves the industry partner financing all of the aspects of sampling (collection, transport, storage, processing, etc.), while Health Canada is responsible for analyzing these samples for a comprehensive set of nutrients.

Since the release of the 2010 CNF the following food categories have been sampled, analyzed and added to the database.

- ready-to-eat breakfast cereals
- yogourts
- processed cheese products
- sausages
- wieners
- deli-meats
- commercial breads
- babyfoods – infant cereals and jarred foods
- soups – condensed and ready to eat
- margarines
- energy drinks
- vitamin waters

A major focus of this effort was to update foods which are major contributors of sodium to the diet.

2. Other sources incorporated

Changes include those adopted by USDA[1] since SR22 (SR 23-27) which were appropriate for addition of foods and/or nutrients as data became available. Prominent changes within the USDA updates include:

Nutrients

- Nutrient values were updated for many foods. These updated values can be found in the nutrient amount file and the change nutrient file.
- Some nutrient profiles were expanded to include a more comprehensive dataset. These new values can be found in the nutrient amount file and the added nutrients file.
- Added nutrient codes for this edition

vitamin B12, added	578
vitamin E, alpha-tocopherol, added	573
vitamin D2, ergocalciferol	325

- Name change for nutrient code 328 from vitamin D to vitamin D (D2+D3).
- Deleted nutrient codes for

raffinose	288
stachyose	289

- Added nutrient source code 18 (imputed data that USDA has deleted)
- Deleted nutrient source code 81

Added food groups

- Babyfoods, group 3, has been added back to the CNF.

Added foods

- A number of foods new to the USDA since SR22 have been added to the CNF: fast food pizzas, canned and frozen ravioli (with and without meat) and lasagna, microwavable and canned chili with beans, pot pies, pulled pork, frozen chicken nuggets (white meat only and mixed white/dark meat), chicken tenders and seasoned rotisserie chicken, potato salad with egg, corn dogs, tortilla chips, taco shells and seasoning mixes, various ready-to-eat sauces, cinnamon buns, ice cream sandwiches, garlic bread, pancake mix, ethnic Indian breads, several types of canned vegetables and legumes (total contents, drained as well as drained and rinsed), dried fruits, and various cultivar-specific apples and pears.

Many of the foods recently added to the USDA Nutrient Databank for Standard Reference are brand or product specific profiles which are not added to the CNF. Many of the brands available in the US are not available in Canada, or have different formulation in the Canadian product.

As with our SNAP-CAN program, many of the foods new or updated by USDA in the past number of years is focused on tracking potential changes in sodium values as manufacturers reformulate to lower the sodium content.

Updated foods

- Data for various cuts of chicken were updated. Vitamin D and selenium values were updated in various beef cuts.

3. Structure

- Once again for the 2015 version we are offering update files which track records that have been changed, added or deleted since the release of the 2010 version of the CNF. These update files are available for the added, changed, or deleted foods, nutrient names, nutrient values, and conversion factors. The structure of the database (tables and fields) remains very similar to that of CNF 2010 except for a change that results in the field listing the food codes is no longer the primary field used to join the tables.
- For further details of the database tables and fields, update files and the food code field change please see the database structure guide in the section "download files".
- For this edition we are offering the downloadable files in CSV and Microsoft EXCEL formats. This will be of benefit to a number of clients using Mac computer systems. New for this version we will also be offering the database as a downloadable Microsoft Access file in which the tables have been joined and common queries created.

HIGHLIGHT FEATURES

1. General information

The CNF is a food composition database featuring bilingual (French and English) food names, measure descriptions and background information. The measures follow the metric system. Only foods available on the market in Canada are included, usually as generic representative composites, except where each brand is considered unique such as breakfast cereals and chocolate bars.

Each food and each nutrient record carry a date of entry field which can be extremely important in assessing how current and relevant the data are for a specific application. Also this feature can be helpful in tracking changes.

While we are still offering the downloadable files (without software) for those who prefer all of the metadata or wanting to update their existing programs, you can use our interactive online searchable program from which you can view, print or export reports of nutrient profiles per reasonable serving sizes.

2. Nutrient Value of Some Common Foods (2008)[3]

The *Nutrient Value of Some Common Foods* (NVSCF) booklet provides Canadians with a resource that lists 19 nutrients for 1000 of the most commonly consumed foods in Canada. Selected nutrient values are extracted from the CNF and recalculated in terms of a reasonable serving size of the foods in the ready-to-eat form of the food. This 2008 version now emphasizes mixed dishes rather than just individual ingredients. Use this quick and easy reference to help make informed food choices through an understanding of the nutrient content of the foods you eat.

This booklet is very popular with students, health professionals, and the general population. Health Canada no longer offers printed copies of this booklet but the PDF version is available for download from our website where one can either view the tables online or print a copy.

3. Tagnames

International Network of Food Data Systems (INFOODS), **tagnames**. A unique abbreviation for a food component developed by INFOODS to aid in the interchange of data.

The codes for the tagnames are included in the nutrient name file. For a description of these tagnames please see the INFOODS website.[4]

4. Country code

A field called country code can be found in the food name file. Originally designed to reference the origin of a food profile from any country, at the moment, full profiles, or near full profiles, are borrowed only from USDA so this is now a quick reference to the USDA NDB code for that food.

5. Contact email for questions and listserv for announcements

If you have any questions or concerns regarding the CNF database, please contact the CNF team.

If you would like to be added to our listserv for announcements of upcoming changes to the CNF, please send us an email to the address above stating that you would like to join and we will add your email address to the list.

LIMITATIONS

It is essential that potential users of the CNF recognize its strengths and limitations. The database is maintained and updated on an ongoing basis. USDA releases, relevant scientific literature, industry data, and current analyses from Canadian government, university and research laboratories, are gathered and examined to meet inclusion criteria. Imputations are added when determined to be valid.

Thus, *average* amounts of nutrients in foods available in Canada are supplied. The exact nutrient composition of a specific apple or cookie is not found on the CNF. These averages, except where indicated otherwise, take into account sources of a given food across Canada. Local foods may have a different profile than the national average.

Every food item may not contain a complete nutrient data set. Where data is unavailable for a particular nutrient it is a missing value and not a true zero. Software developers and others personalizing the database must learn to understand and account for the missing values.

The CNF is particularly suited for assessment of diets, recipe development, menu planning when ingredients or menu items are not specific and for population nutrition surveillance activities, where nutrient intake distributions are used to conduct risk assessments such as modeling for fortification proposals. It is also useful in the initial stages of product development to ensure that nutritional targets can be met. Use of generic information from reference databases for calculating nutrient values for labelling purposes is generally not recommended since a close match to the product formulation or specific ingredients and processes cannot be assured.

Most users are looking for an average or mean value for a generic representation of the foods as described. These generic values have been derived from combining brands of similar products, for example all major brands of ketchup; various varieties of oranges or similar beef cuts from various producers. These data may also be developed by a commodity association utilizing sample units from different producers, to provide a hypothetical, generic product that is represented by a single nutrient profile. Those individuals seeking brand specific nutrient data are encouraged to look for the Nutrition Facts table found on all pre-packaged foods sold in Canada.

Analytical values represent the total amount of the nutrient present in the edible portion of the food, including any nutrients added in processing. The values do not necessarily represent the nutrient amounts available to the body which may be influenced by nutrient interactions, physiological mechanisms, nutritional status and other factors, where not enough information is available.

INFORMATION ON NUTRIENTS

For the most part nutrients were determined by AOAC methods[5] or by methods approved by Health Canada nutrition research scientists. Documentation accompanying each standard release of the USDA Nutrient Database for Standard Reference[1] outlines methodologies employed for each nutrient in detail.

a) **Proximate components** include moisture (water), protein, total lipid (fat), carbohydrate, ash and alcohol when present. Addition of these 6 components should approach 100.

b) **Carbohydrate**, when present, is determined as the difference between 100 and the sum of the remaining proximate components. The determination of total carbohydrate values by this method of calculation includes total dietary fibre. Care should be exercised when making comparisons with some other food composition databases worldwide as many countries employ a different approach for the assessment of the carbohydrate content.

class (DP)*	sub-group	components
sugars (1–2)	monosaccharides	glucose, galactose, fructose
	disaccharides	sucrose, lactose, maltose
	polyols	sorbitol, mannitol
oligosaccharides (3–9)	malto-oligosaccharides	maltodextrins
	other oligosaccharides	raffinose, stachyose, fructo-oligosaccharides, fructans galacto-oligosaccharides
polysaccharides (>9)	starches	amylose, amylopectin, modified starches
	non-starch polysaccharides	cellulose, hemicellulose, pectins, hydrocolloids

* The dietary carbohydrates are a diverse group of substances with a range of chemical, physical and physiological properties. The primary classification of dietary carbohydrate is based on chemistry, that is character of individual monomers, degree of polymerization (DP) and type of linkage (α or β). Because the analyses of total dietary fibre, total sugars, and starch (including maltodextrin) are performed separately and reflect the analytical variability inherent to the measurement process, the sum of these carbohydrate fractions may not equal the carbohydrate-by-difference value.

The total carbohydrate many not be equal to the sum of total sugars and total dietary fibres. This is because there are components within the category of carbohydrates where data are not available (for example: oligosaccharide, polydextrose and starch). In the case of animal (food) products, those particular carbohydrate values is estimated as zero (with assigned source code of 12).

c) **Total sugars** is defined as the sum of the individual monosaccharides (galactose, glucose, and fructose) and disaccharides (sucrose, lactose and maltose). It does not include sugar alcohols which are present in small amounts in some fruits and is sometimes added to foods as a sweetener. It also does not include the maltodextrins which are easily digested and absorbed like other α-glucans and frequently added as sweeteners, fat substitutes, and to modify the texture of food products.

d) **Total dietary fibre (TDF)** is made of complex and heterogeneous polymeric materials that are not easy to separate from other food components particularly starch. Methods for dietary fibre have evolved remarkably over the past decade and at the moment there are 3 different AOAC approved methods for measuring TDF. TDF values originating from USDA data are analysed by AOAC[5] methods 985.29 (Prosky) and 991.43 (Lee). Values originating from Canadian government laboratories (nutrient source code 3) were analysed using either the AOAC methods 992.16 (Mongeau) or 991.43 (Lee modified Prosky). Products from SNAP-CAN indicating that they contain inulin were also analyzed separately for inulin and the value included in the total.

TDF is assumed zero in many foods after review of literature and/or consultation with scientific experts (nutrient source code 12).

e) **Total starch** is not reported for very many foods in North American databases, but is analyzed for by the method AOAC 996.11. One can manipulate this method to include maltodextrins or exclude them.

f) **Protein** values are calculated from the level of measured total nitrogen in the food, using the conversion factors recommended by Jones (1941).[6] Protein values for soy products, chocolate, cocoa products, coffee, mushrooms and yeast are adjusted for non-nitrogenous material. The adjusted protein conversion factors used to calculate protein for these items are as follows:

soy products	5.71
chocolate and cocoa	4.74
coffee	5.3
mushrooms	4.38
yeast	5.7
white flour	5.7
whole wheat flour	5.83

Amino acids are analyzed by a different method of analysis than total protein. Therefore, the sum of amino acids will be close to but not identical to the total protein.

g) **Total lipid** or crude fat usually includes both the triglyceride, energy yielding fraction and other lipid components such as glycerol, sterols and phospholipids and are determined by gravimetric methods. This is unlike the **triglyceride fat** or 'triglyceride equivalent' which accounts only for the energy yielding fatty acid as triglyceride component. This triglyceride equivalent expression is the most relevant and accurate method of reporting fat and for calculating the energy in a food. Therefore, for all of the SNAP-CAN foods this is the expression which is used.

Fatty acids are reported as free fatty acids whereas the triglyceride equivalent is calculated from the sum of fatty acid methyl esters which accounts for the glycerol backbone of the trigyceride.[7] Therefore, the sum of fatty acids will be close to but not identical to the total fat as triglyceride equivalents

h) **Food energy** is expressed in both kilocalories (kcal) and kilojoules (kJ). One kcal equals 4.184 kJ. Calorie values are based on the Atwater system for determining energy values; as the specific Atwater factors (specific to described food types) are used, for most foods the calorie value will differ from that calculated by the general 4/9/4 factors for protein/fat/carbohydrate. Details for the derivation of the Atwater calorie factors are outlined in Agriculture Handbook No. 74.[8]

i) **Minerals** included in the database are calcium, iron, magnesium, phosphorus, potassium, sodium, zinc, copper, manganese and selenium. Levels of minerals for most foods are determined by the methods of AOAC (2003) usually by atomic absorption (AOAC 985.35) or inductively coupled plasma emission spectrophotometry (AOAC 984.27) or for the SNAP-CAN foods by ICP/MS which is based on EPA 3051.[9]

j) **Vitamin A** activity of a food is expressed as a sum of its retinol and provitamin A carotenoid content after conversion. The primary unit of biologic activity for vitamin A is called all-trans retinol. Pro vitamin A carotenoids are a group of plant pigments that are provitamin or precursors to vitamin A. The body cannot use these inactive forms until they are converted to the active form, retinol. Unfortunately, more than one method of expressing this total activity has been developed and no single method has been universally adopted. Also, the National Academy of Sciences,[10] in 2000, determined that the contribution from carotenoids is roughly half of that thought previously, resulting in the new unit, Retinol Activity Equivalents.

Nutrition labels in the United States use International Units or IU. We do not use these units in Canada. It is not advisable to convert between RE's and IU's in a food containing both retinol and carotenoids as one doesn't have information on the proportions of each. Calculating any of these activity standards is best done by starting with the amounts, in micrograms (µg) of each fraction contributing to activity.

Vitamin A on the Canadian Nutrition Facts table is expressed in Retinol Equivalents, RE

1 RE = 1 µg retinol + 1 µg β-carotene/6 + 1 µg other carotenoids/12

The Dietary Reference Intakes (DRI)[10] recommendations now suggest Vitamin A should be expressed in terms of Retinol Activity Equivalents or RAE

1 RAE = 1 µg retinol + 1 µg β-carotene/12 + 1 µg α-carotene/24 + 1 µg β-cryptoxanthin/24

k) **Carotenoids** available in the CNF include:

α-carotene (alpha-carotene)
lycopene
β- cryptoxanthin (beta-cryptoxanthin)
lutein & zeaxanthin (combined)

l) **Vitamin D** is expressed in units of µg (micrograms or mcg) or IU's

40 IU Vitamin D = 1 µg

Recent studies have suggested a relation between vitamin D status and health outcomes among even apparently healthy Canadians,[11] and particularly in Canadian females of South Asian descent[12,13] Therefore, CNF staff along with USDA have been working to expand and update the existing dataset for vitamin D, which has been useful in investigating dietary requirements of vitamin D in vulnerable groups. An Institute of Medicine Committee with Canadian representation, issued their report in 2011 recommending revisions to the Dietary Reference Intakes (DRIs) for vitamin D.[14]

The analytical method is based on saponification and extraction with solvent(s), cleanup steps and quantification by HPLC or LC/MS.[15]

Cholecalciferol or vitamin D3 is the form naturally occurring in animal products and the form most commonly added to fortified foods. Ergocalciferol, or vitamin D2, is the form found in some plants and is sometimes added to fortified foods, such as soy beverages. The database only reports the sum of D3 and D2. Very recent studies indicate that there may be further contributions to vitamin D activity from a metabolite called 25 hydroxy-D3 in animal products such as meat, poultry, and eggs.[15] However, values have not yet been determined for nationally representative sample sets so these contributions are not reflected in the values in the CNF.

m) **Vitamin E** activity now expressed in the CNF as α-tocopherol in mg. There are a number of isomers of vitamin E. In the past, a calculation of vitamin E equivalents which took into account activities of various isomers, was most commonly used. However, the National Academy of Sciences[10] has now determined that the only isomer of significant activity is the RRR-α-tocopherol expressed in mg. As such the only expression of vitamin E activity now in the CNF is α-tocopherol in mg. Synthetic vitamin E is referred to as all-rac-α-tocopherol (somethimes referred to as dl-α-tocopherol) which contains both the active RRR form and the inactive SSS form in equal amounts. For foods which are fortified with synthetic vitamin E the value reported is converted using factors in in accordance with the Natural Health Products (NHP) Monograph for vitamin E.[16]

1 mg of α-tocopherol = 0.5 mg of the all-rac- α-tocopherol
1 mg of α-tocopherol = 0.45 mg of the all-rac- α-tocopherol acetate
1 mg of α-tocopherol = 0.41 mg of the all-rac- α-tocopherol succinate

n) **Niacin** is expressed both in terms of mg of preformed niacinamide present in the food as well as niacin equivalents (NE) which includes that which can be formed from tryptophan. There are 2 methods of calculating niacin equivalents (code 409):

If preformed niacin, mg and tryptophan, g were present in the database then:
(tryptophan x 1000/60) + preformed niacin = NE

If a tryptophan value was not available, it was imputed to be 1.1% of total protein and:
(0.011 x protein) x 1000/60 + preformed niacin = NE

USDA reports that niacin values are determined by microbiological methods. For the SNAP-CAN foods determination is by an adaptation of an LC-isotope dilution MS method.[17]

o) **Folate and folic acid** are two chemical forms now in foods which contribute to folate bioactivity:

- naturally occurring or food folate
- added synthetic form, folic acid.

The folic acid form is more active than the food folate form. The data can be found in the following forms:

- folic acid in µg
- food folate or naturally occurring folate in µg
- the arithmetic sum of the two (not accounting for activity) sometimes referred to as total folacin or simply as folate in µg. This is the unit to be used on the Canadian Nutrition Facts table.
- Dietary Folate Equivalents
  1 DFE = (µg folic acid x 1.7) + µg food folate
  The DFE is now the most common unit of expression when referring to recent population nutrition studies.

These data assume that the additions of folic acid are as outlined in the regulations.[2] In practice overages are common. Where a range is allowed, calculated values are based on the midpoint.

For cornmeal, pasta and rice, addition is optional, but some realities in the marketplace allow us to make generalizations. There are very few manufacturers of cornmeal and they do not want to produce both fortified and unfortified batches.

Most pasta is fortified in Canada. There are some imported brands which are not fortified and there is a separate listing for these in the database. However, when it is an ingredient in the manufacture of another food we are assuming it is fortified. Values for cooked pasta were calculated based on the moisture difference between cooked and dry. There are no standard retention factors for folic acid upon cooking/processing.

In practice up to this point, most types of rice are not fortified; only precooked rice is commonly fortified.

Recently generated data would use the tri-enzyme microbiological procedure[18] which measures the total folate including folic acid in enriched foods. Folic acid is measured either by the microbiological method without enzymes or by LC-MS/MS.[19] Food folate is then calculated by difference or by the

sum of the peaks for the 4 major forms of naturally occurring folates. For unenriched foods food folate would be equivalent to total folacin since folic acid does not occur naturally in foods.

p) **Other vitamins**, including vitamin C, thiamin, riboflavin, pantothenic acid, vitamin B6, vitamin B12, total choline and betaine, as well as vitamin K, are expressed using methods identical to those detailed in the USDA Release 27 documentation.[1]

q) **Fatty acids** are referred to by a variety of nomenclature systems, many of which date back prior to common knowledge of specific and geometric isomers. For unsaturated fatty acids, the trivial and systematic names reflect the most common isomer, although all isomers are included in the value. The most specific descriptor of the isomers is that indicated through the use of a shorthand system of numbers and letters. The first number in the nutrient description (before the colon) is the number of carbon atoms and the second (after the colon) is the number of double bonds in the chain. The letter c, t or i indicates whether or not the bond is cis or trans. The i indicates that this polyunsaturated fatty acid has a mixture of cis and trans double bonds and is not a single isomer but the peaks cannot be easily differentiated.

i,e., 18:2 t,t depicts a fatty acid with 18 carbon atoms,
2 double bonds, and
a trans configuration about both of those double bonds.

Where the word 'undifferentiated' appears, the proportions of cis and trans are unknown as the values were entered into the database prior to the practice of analyzing separately for the geometric isomers. This is especially of note in the bakery products group and snack food group where the trans content may be high, but is not reported.

Current methods used to measure fatty acids in foods from SNAP-CAN allow for the separate identification of cis and trans isomers. For these foods, undifferentiated fields are the calculated sum of all differentiated isomers.

i.e., 18:2 undiff is the sum of 18:2ccn-6, 18:2t,t , 18:2i and 18:2cla

Omega-3 and omega-6 isomers are denoted in shorthand as n-3 and n-6. The n-number indicates the position of the first double bond from the methyl end of the carbon chain.

i.e., 18:2 c,c n-6 18 carbon atoms
2 double bonds
the position of the first double bond indicates an omega 6
a cis configuration about both of those double bonds.

FATTY ACIDS IN THE CANADIAN NUTRIENT FILE

NUTR_CODE	NUTR_SYMBOL	FATTY ACIDS	SYSTEMATIC NAME	COMMON NAME OF MOST TYPICAL ISOMER
606	TSAT	fatty acids, saturated, total		
607	4:0	4:0	butanoic	butyric
608	6:0	6:0	hexanoic	caproic
609	8:0	8:0	octanoic	caprylic
610	10:0	10:0	decanoic	capric
611	12:0	12:0	dodecanoic	lauric
696	13:0	13:0	tridecanoic	n/a
612	14:0	14:0	tetradecanoic	myristic
613	16:0	16:0	hexadecanoic	palmitic
614	18:0	18:0	octadecanoic	stearic
615	20:0	20:0	eicosanoic	arachidic
624	22:0	22:0	docosanoic	behenic
652	15:0	15:0	pentadecanoic	pentadecylic
653	17:0	17:0	heptadecanoic	margaric
654	24:0	24:0	tetracosanoic	lignoceric
645	MUFA	fatty acids, monounsaturated, total		
860	12:1	12:1	lauroleic	n/a
625	14:1	14:1	tetradecenoic	myristoleic
697	15:1	15:1	pentadecenoic	n/a
626	16:1undiff	16:1 undifferentiated	hexadecenoic	palmitoleic
673	16:1c	16:1c	n/a	n/a
662	16:1t	16:1t	n/a	n/a
687	17:1	17:1	heptadecenoic	n/a
617	18:1undiff	18:1 undifferentiated	octadecenoic	oleic
674	18:1c	18:1c	n/a	n/a
663	18:1t	18:1t	n/a	n/a
628	20:1	20:1	eicosenoic	gadoleic
630	22:1undiff	22:1 undifferentiated	docosenoic	erucic
676	22:1c	22:1c	n/a	n/a
664	22:1t	22:1t	n/a	n/a
859	24:1undiff	24:1 undifferentiated	tetracosenoic	nervonic
671	24:1c	24:1c	cis-tetracosenoic	n/a
646	PUFA	fatty acids, polyunsaturated, total		
618	18:2	18:2	octadecadienoic	linoleic
666	18:2i	18:2 trans isomers not specified	n/a	n/a
675	18:2ccn-6	18:2cc omega 6	n/a	n/a
670	18:2cla	18:2 Conjugated linoleic acid	n/a	n/a

NUTR_CODE	NUTR_SYMBOL	FATTY ACIDS	SYSTEMATIC NAME	COMMON NAME OF MOST TYPICAL ISOMER
669	18:2t,t	18:2t,t	n/a	n/a
619	18:3undiff	18:3 undifferentiated	octadecatrienoic	linolenic
851	18:3cccn-3	18:3ccc omega 3	n/a	alpha-linolenic
685	18:3cccn-6	18:3ccc omega 6	n/a	gamma-linolenic
856	18:3i	18:3 trans isomers not specified	n/a	n/a
627	18:4	18:4	octadecatetraenoic	Parinaric
672	20:2cc	20:2cc	n/a	n/a
689	20:3	20:3	eicosatrienoic	n/a
852	20:3n-3	20:3n-3	n/a	n/a
853	20:3n-6	20:3n-6	n/a	n/a
620	20:4	20:4	eicosatetraenoic	n/a
855	20:4n-6	20:4n-6	n/a	trachidonic
629	20:5n-3	20:5n-3	eicosapentaenoic	timnodonic
857	21:5	21:5	n/a	n/a
862	22:2	22:2	docosadienoic	n/a
861	22:3	22:3	n/a	n/a
858	22:4n-6	22:4n-6	docosatetraenoic	n/a
631	22:5n-3	22:5n-3	docosapentaenoic	clupanodonic
621	22:6n-3	22:6n-3	docosahexaenoic	n/a

Expression

The values shown are for the actual quantity (g/100g) of each fatty acid and do not represent fatty acid triglycerides. Raw methyl ester data are converted to grams of free fatty acid per 100g of total lipid (fat) using Sheppard conversion factors[20] and then to grams of fatty acid per 100g edible portion of food using the total lipid content.

Fatty acid totals

As the individual fatty acids are determined by a different analytical method than that of total fat, the sum of fatty acids is rarely exactly equal to the total fat value. Moreover, total fat may include other fatty acids, phospholipids or sterols and the recovery of fatty acids in the recommended AOAC method for fatty acid profiles is not expected to yield 100% recoveries.[7]

Values for total saturated, monounsaturated and polyunsaturated fatty acids may include individual fatty acid isomers not listed in the CNF; therefore, the sum of their values may exceed the sum of the individual fatty acids listed. In rare cases, the sum of individual fatty acids may exceed the sum of the values given for the total saturated fatty acids (SFA), monounsaturated fatty acids (MUFA), and/or polyunsaturated fatty acids (PUFA). These differences are generally caused by rounding and should be relatively small.

Values for conjugated linoleic acid are not included in the total trans sum as there are reports that CLAs yield health benefits and do not carry the negative effects of other trans fatty acids.

For formulated or brand name foods, industry data were often available for only the fatty acid classes (SFA, MUFA, PUFA) or only for the fatty acids required on the Nutrition Facts table (SFA and TRFA), but were lacking for individual fatty acids.

Table 3 of the appendix lists the fatty acids included in the different totals: monounsaturated, polyunsaturated, saturated fatty acids, etc.

OMEGA FATTY ACIDS IN THE CANADIAN NUTRIENT FILE

The following omega fatty acid isomers are listed in the CNF:

NUTRIENT CODE	NUTRIENT NAME
n/a	omega 6
675	fatty acids, polyunsaturated, 18:2ccn-6, linoleic
685	fatty acids, polyunsaturated, 18:3cccn-6, gamma linoleic
689	fatty acids, polyunsaturated, 20:3n-6, eicosatrienoic
855	fatty acids, polyunsaturated, 20:4n-6, arachidonic
858	fatty acids, polyunsaturated, 22:4n-6, docosatetraenoic
n/a	omega 3
851	fatty acids, polyunsaturated, 18:3cccn-3, alpha linolenic
629	fatty acids, polyunsaturated, 20:5n-3, eicosapentaenoic
631	fatty acids, polyunsaturated, 22:5n-3, docosapentaenoic
621	fatty acids, polyunsaturated, 22:6n-3, docosahexaenoic

Note: isomers of omega 3 arachidonic and omega 6 docosapentaenoic do exist in nature, but the USDA does not list these as separate nutrient codes.

Where the data profile is sufficient we are now reporting the sum of omega 3 (nutr code 902) and the sum of omega 6 fatty acids (nutr code 903).

r) **Cholesterol** is present only in foods of animal origin. For foods of plant origin, the value for cholesterol is assumed to be zero (nutrient source code 12).

s) **Amino acids** are extracted in 3 groups: tryptophan, methionine/cystine and the remaining 18 amino acids. All samples from SNAP-CAN were analyzed by UPLC-MS/MS.[21]

DESCRIPTION OF FILE CONTENTS

This next section describes some of the most practical aspects of the file contents. For a more detailed outline of the database structure, field names/type etc and the appropriate linkages please see the section entitled "download files".

A. Food name file

a) Canadian food code

The food code is a four digit number which uniquely identifies each food, but doesn't describe or classify the food in any way. It is not the primary key and will not change over time. Please see the database structure file for further details.

For those wanting to retrieve information regarding whether or not a food is derived from a USDA food and which food, please refer to the field entitled COUNTRY_C (only available in the full download version).

b) Food group code

At present foods are grouped under 23 different group headings based on similar characteristics of the foods.

FOOD GROUP CODES AND DESCRIPTION

FOOD GROUP CODE	DESCRIPTION
1	dairy and egg products
2	spices and herbs
3	babyfoods
4	fats and oils
5	poultry products
6	soups, sauces and gravies
7	sausages and luncheon meats
8	breakfast cereals
9	fruits and fruit juices
10	pork products
11	vegetables and vegetable products
12	nuts and seeds
13	beef products
14	beverages
15	finfish and shellfish products
16	legumes and legume Products
17	lamb, veal and game
18	baked products
19	sweets
20	cereals, grains and pasta
21	fast foods
22	mixed dishes
25	snacks

c) Changing the **food source code** indicates the degree of Canadian content for the full profile.

FOOD SOURCE CODES AND DESCRIPTIONS

FOOD SOURCE CODE	DESCRIPTION
0	food based on data from USDA: no changes
1	food based on data from USDA: some nutrients changed to meet Canadian regulations
3	food based on data from USDA: some nutrients analyzed in the Canadian product
4	food based on data from USDA: some nutrients calculated in the Canadian product
6	food based on data from USDA: some nutrient values supplied by the manufacturers of the Canadian product
9	data supplied by an international database other than USDA
10	food based on data from USDA: some nutrients analyzed in the Canadian product. Food has been deleted from USDA
11	food based on data from USDA: Food has been deleted from USDA
12	food based on data from USDA: information from USDA survey files
20	food available in the Canadian supply, but not found in the USDA: no changes from the Nutrition Canada Survey (1970–1972)
23	food available in the Canadian supply, major nutrients analyzed in the Canadian product
24	major nutrients calculated in the Canadian product; not a SNAP-CAN food
26	food available in the Canadian supply, but not found in the USDA: nutrient values supplied by manufacturers of the Canadian product
28	traditional food
35	CNF recipe compilation
36	food that are only ingredients
37	food is from the Sampling and Nutrient Analysis Program (SNAP-CAN)

d) Descriptive information about the food items is included in this file in both French and English versions. The **foodnames** are only available in this version in one length which does not include abbreviations and can be up to 255 characters long. A systematic hierarchy is utilized for recording common food names. Elements that may be included are product type, breed, part, physical state, shape or form, cooking method, preservation method, and/or brand name.

For example:

chicken, broiler, thigh, meat and skin, stewed
cereal, ready to eat, Cheerios: honey nut, General Mills
soup, cream, mushroom, canned, condensed, reduced fat, 2% M.F. milk added

B. Nutrient amount file

Nutrient values per 100 g of food (edible portion) are stored in the nutrient amount file. Unique fields are:

a) The **nutrient code** – three digit nutrient codes as adopted from the USDA system are maintained. They are not alphabetical or sequential.

b) **Mean value**, all available data per 100 grams edible portion of the food as described.

c) **Standard error** of the samples, sample composites or contributing papers.

d) **Number of observations**, or the number of samples on which the data are based. If no standard error or number of samples is included, the values have been imputed or calculated from another form of the food, from a similar food, or are based on a calculated recipe.

e) **Source of nutrient amount data.** The CNF supplies a numeric code or flag for each nutrient value which reveals to the user of the database, the source and/or type of each individual nutrient value.

TYPES OF DATA FOUND ON THE CNF:

analyzed	Will show a mean, standard error and number of observations. Values are derived from chemical analysis of representative samples.
calculated	Will only show a mean value. No actual analyses are made but the calculations are straightforward. E.g. Soup diluted according to label specifications.
recipe	Calculated value based on ingredient proportions.
imputed	Will only show a mean value. Assumptions have been made about the data by the compiler upon consultation with scientific experts or scientific literature.
provisional	May show a mean, standard error and number of observations, but there are questions surrounding the sampling and/or methods of analysis for these data, which remain to be verified.

LIST OF THE NUTRIENT SOURCE CODES:

NUTRIENT SOURCE CODE	DESCRIPTION
0	no change from USDA
1	nutrient ***changed*** to meet Canadian regulations
2	nutrient ***calculated*** from data other than USDA
3	nutrient ***analyzed*** in a Canadian government lab
4	nutrient ***calculated*** from USDA data
5	nutrient ***imputed*** from a similar USDA food
6	nutrient supplied by Canadian industry, documentation incomplete
7	nutrient ***analyzed*** in Canadian product (non-government lab)
8	nutrient value of food created for the Nutrition Canada Survey
9	nutrient from the label declaration
10	nutrient derived from scientific literature
12	nutrient value is an assumed zero
14	provisional data
15	nutrient ***imputed*** from data other than USDA
16	calculated field
17	calculated from analytical Canadian data
18	imputed data that USDA has deleted
51	calculated using a recipe editor
82	Danish Food Composition Databank (Revision 5.0) – Danish Institute for Food and Veterinary Research
83	Fineli. 1999–2003. Finnish Food Composition Database. National Public Health Institute
84	U.K. food composition database – McCance and Widdowson

C. Conversion factor file

Portion size conversion factors

The conversion factors are food specific multipliers by which the nutrient values for each food may be multiplied to give the nutrients in described portions. Mathematically they are the weight of the portion as described divided by 100 (the nutrient values are recorded per 100 grams of the food). The following formula is used to calculate the nutrient content per household measure.

N = V*W/100 where

N = nutrient value per household measure
V = nutrient value per 100g (all nutrient values are stored in the database per 100g edible portion)
W = g weight of portion

- Multiplying by the factors provides the nutrients in the edible portions described on the file (e.g., 1 fruit; 100 mL puree). These are generic weights of a described portion which could differ from local markets (i.e. organic tend to be smaller, fall vegetables larger). If this is crucial to a study one may want to consider weighing the specific items(s) and using those weights instead.
- Weights are given for edible material without refuse, that is, the weight of an apple without the core or stem, or a chicken leg without the bone etc.
- All measurements are in metric. Metric System Equivalents employed in conversions are supplied in table 1. All linear measurements are in mm or cm.

D. Refuse amount file

Refuse is the inedible material (i.e. seeds, bone, and skin) contained in some foods. For raw meats, the items as purchased are raw; for cooked meats, the percent refuse is inedible material from the cooked state. For meat cuts containing bone, any connective tissue present is included in the value given for bone. Separable fat is not part of the refuse if the meat is described as lean and fat. Lean refers to muscle tissue that can be readily separated out of the intact cut and includes any marbled fat within the muscle not removable by dissection.

E. Yield amount file

Occasionally it is more useful to provide a weight of edible cooked food from a raw as purchased or raw with refuse state. These **yields** reflect both losses as refuse, and cooking losses as moisture and/or evaporation. They cannot be applied to data for the comparable raw food to "cook by calculation" as there are other factors such as nutrient retention to consider in such calculations. Alternatively they can reflect gains in moisture if prepared from a dry product (ie pudding mix).

APPENDIX

TABLE 1 – METRIC SYSTEM EQUIVALENTS FOR UNITS OF MEASURE

	US AND IMPERIAL MEASURES	METRIC SYSTEM EQUIVALENTS	CANADIAN METRIC HOUSEHOLD MEASURE	
volume	1 teaspoon	4.9 ml	5 ml	n/a
	1 tablespoon	14.8 ml	15.0 ml	n/a
	1 fluid ounce (US)	29.57 ml	n/a	n/a
	1 fluid ounce (Imperial)	28.41 ml	n/a	n/a
	1 cup (8 US fluid ounces)	236.6 ml	250 ml	n/a
	1 pint (16 US fluid ounces)	473.2 ml	n/a	n/a
	1 pint (20 Imperial fluid ounces)	568.3 ml	500 ml	n/a
	1 quart (32 US fluid ounces)	946.4 ml	n/a	n/a
	1 quart (40 Imperial fluid ounces)	1136.5 ml	1 L	n/a
	1 gallon (128 US fluid ounces)	3786 ml	n/a	n/a
	1 gallon (160 Imperial fluid ounces)	4546 ml	4 L	n/a
	1 cubic inch	16.39 ml	2.54 cm cube	15.63 ml
length	1 inch	2.54 cm, 25.40 mm	n/a	n/a
weight	1 ounce	28.35 g	n/a	n/a
	1 pound	453.6 g	n/a	n/a
	1 cup (poultry and cooked meats chopped and diced)	140 g	250 ml	148 g
	1 cup (poultry and cooked meats ground)	110 g	250 ml	116 g
energy	1 kilocalorie	4.184 kJ	n/a	n/a

TABLE 2 – LIST OF DEFINITIONS

heaping teaspoon	refers to an ordinary teaspoon rather than to a standard measuring teaspoon
not packed	lightly filled measure without pressing down on the food
packed	maximum amount of food that can be pressed into the measure without altering its physical structure
pared	skin removed plus some adhering flesh
peeled	skin removed with a minimum of adhering flesh

TABLE 3 – LIST OF FATTY ACIDS CONTRIBUTING TO THE DIFFERENT TOTALS

NUTR_CODE	NUTR_SYMBOL	TSAT	MUFA	PUFA	TRFA	TRMO	TRPO	OMEGA 3	OMEGA 6
607	**4:0**	X	n/a	n/a	n/a	n/a	n/a	n/a	n/a
608	**6:0**	X	n/a	n/a	n/a	n/a	n/a	n/a	n/a
609	**8:0**	X	n/a	n/a	n/a	n/a	n/a	n/a	n/a
610	**10:0**	X	n/a	n/a	n/a	n/a	n/a	n/a	n/a
611	**12:0**	X	n/a	n/a	n/a	n/a	n/a	n/a	n/a
696	**13:0**	X	n/a	n/a	n/a	n/a	n/a	n/a	n/a
612	**14:0**	X	n/a	n/a	n/a	n/a	n/a	n/a	n/a
652	**15:0**	X	n/a	n/a	n/a	n/a	n/a	n/a	n/a
613	**16:0**	X	n/a	n/a	n/a	n/a	n/a	n/a	n/a
653	**17:0**	X	n/a	n/a	n/a	n/a	n/a	n/a	n/a
614	**18:0**	X	n/a	n/a	n/a	n/a	n/a	n/a	n/a
615	**20:0**	X	n/a	n/a	n/a	n/a	n/a	n/a	n/a
624	**22:0**	X	n/a	n/a	n/a	n/a	n/a	n/a	n/a
654	**24:0**	X	n/a	n/a	n/a	n/a	n/a	n/a	n/a
860	**12:1**	n/a	X	n/a	n/a	n/a	n/a	n/a	n/a
625	**14:1**	n/a	X	n/a	n/a	n/a	n/a	n/a	n/a
697	**15:1**	n/a	X	n/a	n/a	n/a	n/a	n/a	n/a
626	**16:1undiff**	n/a	X	n/a	n/a	n/a	n/a	n/a	n/a
673	**16:1c**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
662	**16:1t**	n/a	n/a	n/a	X	X	n/a	n/a	n/a
687	**17:1**	n/a	X	n/a	n/a	n/a	n/a	n/a	n/a
617	**18:1undiff**	n/a	X	n/a	n/a	n/a	n/a	n/a	n/a
674	**18:1c**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
663	**18:1t**	n/a	n/a	n/a	X	X	n/a	n/a	n/a
628	**20:1**	n/a	X	n/a	n/a	n/a	n/a	n/a	n/a
630	**22:1undiff**	n/a	X	n/a	n/a	n/a	n/a	n/a	n/a
676	**22:1c**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
664	**22:1t**	n/a	n/a	n/a	X	X	n/a	n/a	n/a
859	**24:1undiff**	n/a	X	n/a	n/a	n/a	n/a	n/a	n/a
671	**24:1c**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
618	**18:2undiff**	n/a	n/a	X	n/a	n/a	n/a	n/a	n/a
675	**18:2ccn-6**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	X
669	**18:2t,t**	n/a	n/a	n/a	X	n/a	X	n/a	n/a
666	**18:2i**	n/a	n/a	n/a	X	n/a	X	n/a	n/a
670	**18:2cla**	n/a	n/a	n/a	NO	n/a	NO	n/a	n/a
619	**18:3undiff**	n/a	n/a	X	n/a	n/a	n/a	n/a	n/a
851	**18:3cccn-3**	n/a	n/a	n/a	n/a	n/a	n/a	X	n/a
685	**18:3cccn-6**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	X
856	**18:3i**	n/a	n/a	n/a	X	n/a	X	n/a	n/a
627	**18:4**	n/a	n/a	X	n/a	n/a	n/a	n/a	n/a
672	**20:2cc**	n/a	n/a	X	n/a	n/a	n/a	n/a	n/a

NUTR_CODE	NUTR_SYMBOL	TSAT	MUFA	PUFA	TRFA	TRMO	TRPO	OMEGA 3	OMEGA 6
689	**20:3**	n/a	n/a	X	n/a	n/a	n/a	n/a	n/a
852	**20:3n-3**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
853	**20:3n-6**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	X
620	**20:4**	n/a	n/a	X	n/a	n/a	n/a	n/a	n/a
855	**20:4n-6**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	X
629	**20:5n-3**	n/a	n/a	X	n/a	n/a	n/a	X	n/a
857	**21:5**	n/a	n/a	X	n/a	n/a	n/a	n/a	n/a
862	**22:2**	n/a	n/a	X	n/a	n/a	n/a	n/a	n/a
861	**22:3**	n/a	n/a	X	n/a	n/a	n/a	n/a	n/a
858	**22:4n-6**	n/a	n/a	X	n/a	n/a	n/a	n/a	X
631	**22:5n-3**	n/a	n/a	X	n/a	n/a	n/a	X	n/a
621	**22:6n-3**	n/a	n/a	X	n/a	n/a	n/a	X	n/a

Only one of 620 and 855 should be included in the total TCPO as they are the same.

Values for conjugated linoleic acid are not included in the total trans sum as there are reports that CLAs yield health benefits and do not carry the negative effects of other trans fatty acids.

LEGEND:

TSAT = total saturated fatty acids

MUFA = total monounsaturated fatty acids

PUFA = total polyunsaturated fatty acids

TRFA = total trans fatty acids

TRMO = total trans monoenoic fatty acids

TRPO = total trans polyenoic fatty acids

omega 3 = total omega 3 polyunsaturated fatty acids

omega 6 = total omega 6 polyunsaturated fatty acids

X = fatty acid present

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NUTRIENT SOURCE SUMMARY

NUTRIENT SOURCE CODE	NUTRIENT SOURCE DESCRIPTION	# RECORDS	PERCENT
0	no change from USDA	320145	57.25
1	nutrient changed to meet Canadian regulations	1608	0.29
2	nutrient calculated from data other than USDA	20000	3.58
3	nutrient analysed in a Canadian government lab	37560	6.72
4	nutrient calculated from USDA data	16911	3.02
5	nutrient imputed from a similar food	11959	2.14
6	nutrient supplied by Canadian Industry, documentation incomplete	2648	0.47
7	nutrient analysed in Canadian product (non-government lab)	10264	1.84
8	nutrient value of food created for the Nutrition Canada survey	582	0.10
9	nutrient from the label declaration	634	0.11
10	nutrient derived from scientific literature	4227	0.76
12	nutrient value is an assumed zero	80963	14.48
14	provisional data	4007	0.72
15	nutrient value imputed from data other than USDA	1634	0.29
16	calculated field	151	0.03
17	calculated from analytical Canadian data	29967	5.36
51	calculated using a recipe/formulation	12858	2.30
82	Danish Food Composition Databank (revision 5.0) Danish Institute for Food and Veterinary Research	30	0.01
83	Fineli. 1999–2003. Finnish food composition database. National Public Health Institute	26	0.00
84	U.K. food composition database – McCance and Widdowson	0	0

NUTRIENT CODE LISTING

Percentage of foods containing the indicated nutrient for which a value is available. For each nutrient, the percentage is calculated as the number of foods containing an entry for the nutrient divided by the total number of foods in the database.

NUTRIENT CODE	NUTRIENT SYMBOL	UNIT	NUTRIENT NAME	# DECIMAL PLACES	# FOODS	PERCENT
203	PROT	g	protein	2	5690	100.00
204	FAT	g	fat (total lipids)	2	5690	100.00
205	CARB	g	carbohydrate, total (by difference)	2	5690	100.00
207	ASH	g	ash, total	2	5689	99.98
208	KCAL	kcal	energy (kilocalories)	0	5690	100.00
209	STAR	g	starch	2	1935	34.01
210	SUCR	g	sucrose	2	2646	46.50
211	GLUC	g	glucose	2	2639	46.38
212	FRUC	g	fructose	2	2635	46.31
213	LACT	g	lactose	2	2614	45.94
214	MALT	g	maltose	2	2592	45.55
221	ALCO	g	alcohol	1	5365	94.29
245	OXAL	mg	oxalic acid	0	51	0.90
255	H2O	g	moisture	2	5690	100.00
260	MANN	g	mannitol	3	1377	24.20
261	SORB	g	sorbitol	3	1386	24.36
262	CAFF	mg	caffeine	0	5378	94.52
263	THBR	mg	theobromine	0	5352	94.06
268	KJ	kJ	energy (kilojoules)	0	5689	99.98
269	TSUG	g	sugars, total	2	4644	81.62
287	GAL	g	galactose	2	2568	45.13
291	TDF	g	fibre, total dietary	1	5467	96.08
301	CA	mg	calcium	0	5639	99.10
303	FE	mg	iron	2	5639	99.10
304	MG	mg	magnesium	0	5476	96.24
305	P	mg	phosphorous	0	5537	97.31
306	K	mg	potassium	0	5525	97.10
307	NA	mg	sodium	0	5646	99.23
309	ZN	mg	zinc	2	5469	96.12
312	CU	mg	copper	3	5419	95.24
315	MN	mg	manganese	3	5104	89.70
317	SE	µg	selenium	1	4967	87.29
319	RT-µG	µg	retinol	0	5190	91.21
320	RAE	µg	retinol activity equivalents	0	5430	95.43
321	BC-µG	µg	beta carotene	0	5037	88.52
322	AC-µG	µg	alpha carotene	0	3350	58.88

NUTRIENT CODE	NUTRIENT SYMBOL	UNIT	NUTRIENT NAME	# DECIMAL PLACES	# FOODS	PERCENT
323	ATMG	mg	alpha-tocopherol	2	4135	72.67
324	D-IU	IU	vitamin D (international untis)	0	4998	87.84
325	D2	µg	vitamin D2 (ergocalciferol)	1	346	6.08
328	D-µG	µg	vitamin D (D2+D3)	1	5001	87.89
334	CRYPX	µg	beta cryptozanthin	0	3356	58.98
337	LYCPN	µg	lycopene	0	3366	59.16
338	LUT+ZEA	µg	lutein and zeaxanthin	0	3344	58.77
341	BTMG	mg	beta-tocopherol	2	761	13.37
342	GTMG	mg	gamma-tocopherol	2	768	13.50
343	DTMG	mg	delta-tocopherol	2	762	13.39
401	VITC	mg	vitamin C	1	5506	96.77
404	THIA	mg	thiamin	3	5410	95.08
405	RIBO	mg	riboflavin	3	5429	95.41
406	N-MG	mg	niacin (nicotinic acid) preformed	3	5456	95.89
409	N-NE	NE	total niacin equivalent	3	5456	95.89
410	PANT	mg	pantothenic acid	3	4754	83.55
415	B6	mg	vitamin B-6	3	5293	93.02
416	BIOT	µg	biotin	0	105	1.85
417	FOLA	µg	total folacin	0	5282	92.83
418	B12	µg	vitamin B-12	2	5336	93.78
421	CHOLN	mg	choline, total	1	2877	50.56
430	VITK	µg	vitamin K	1	3174	55.78
431	FOAC	µg	folic acid	0	5530	97.19
432	FOLN	µg	naturally occurring folate	0	5187	91.16
435	DFE	µg	dietary folate equivalents	0	5191	91.23
454	BETN	mg	betaine	1	1101	19.35
501	TRP	g	tryptophan	3	3855	67.75
502	THR	g	threonine	3	3908	68.68
503	ISO	g	isoleucine	3	3912	68.75
504	LEU	g	leucine	3	3908	68.68
505	LYS	g	lysine	3	3926	69.00
506	MET	g	methionine	3	3923	68.95
507	CYS	g	cystine	3	3848	67.63
508	PHE	g	phenylalanine	3	3908	68.68
509	TYR	g	tyrosine	3	3879	68.17
510	VAL	g	valine	3	3912	68.75
511	ARG	g	arginine	3	3899	68.52
512	HIS	g	histidine	3	3906	68.65
513	ALA	g	alanine	3	3854	67.73
514	ASP	g	aspartic acid	3	3840	67.49
515	GLU	g	glutamic acid	3	3857	67.79

NUTRIENT CODE	NUTRIENT SYMBOL	UNIT	NUTRIENT NAME	# DECIMAL PLACES	# FOODS	PERCENT
516	GLY	g	glycine	3	3855	67.75
517	PRO	g	proline	3	3847	67.61
518	SER	g	serine	3	3846	67.59
521	HYP	g	hydroxyproline	3	607	10.67
550	ASPA	mg	aspartame	0	87	1.53
573	ATMG-A	mg	alpha-tocopherol, added	2	459	8.07
578	B12-A	µg	vitamin B12, added	2	472	8.30
601	CHOL	mg	cholesterol	0	5496	96.59
605	TRFA	g	fatty acids, trans, total	3	5040	88.58
606	TSAT	g	fatty acids, saturated, total	3	5469	96.12
607	4:0	g	fatty acids, saturated, 4:0, butanoic	3	3851	67.68
608	6:0	g	fatty acids, saturated, 6:0, hexanoic	3	3874	68.08
609	8:0	g	fatty acids, saturated, 8:0, octanoic	3	4022	70.69
610	10:0	g	fatty acids, saturated, 10:0, decanoic	3	4326	76.03
611	12:0	g	fatty acids, saturated, 12:0, dodecanoic	3	4489	78.89
612	14:0	g	fatty acids, saturated, 14:0, tetradecanoic	3	4902	86.15
613	16:0	g	fatty acids, saturated, 16:0, hexadecanoic	3	5088	89.42
614	18:0	g	fatty acids, saturated, 18:0, octadecanoic	3	5075	89.19
615	20:0	g	fatty acids, saturated, 20:0, eicosanoic	3	2041	35.87
617	18:1undiff	g	fatty acids, monounsaturated, 18:1undifferentiated, octadecenoic	3	5112	89.84
618	18:2undiff	g	fatty acids, polyunsaturated, 18:2undifferentiated, linoleic, octadecadienoic	3	5129	90.14
619	18:3undiff	g	fatty acids, polyunsaturated, 18:3undifferentiated, linolenic, octadecatrienoic	3	5034	88.47
620	20:4	g	fatty acids, polyunsaturated, 20:4, arachidonic	3	4482	78.77
621	22:6n-3	g	fatty acids, polyunsaturated, 22:6 n-3, docosahexaenoic	3	5553	97.59
624	22:0	g	fatty acids, saturated, 22:0, docosanoic	3	1999	35.13
625	14:1	g	fatty acids, monounsaturated, 14:1, tetradecenoic	3	2024	35.57
626	16:1undiff	g	fatty acids, monounsaturated, 16:1undifferentiated, hexadecenoic	3	4854	85.31
627	18:4	g	fatty acids, polyunsaturated, 18:4, octadecatetraenoic	3	3909	68.70
628	20:1	g	fatty acids, monounsaturated, 20:1, eicosenoic	3	3931	69.09
629	20:5n-3	g	fatty acids, polyunsaturated, 20:5 n-3, eicosapentaenoic	3	4384	77.05
630	22:1undiff	g	fatty acids, monounsaturated, 22:1undifferentiated, docosenoic	3	4158	73.08

NUTRIENT CODE	NUTRIENT SYMBOL	UNIT	NUTRIENT NAME	# DECIMAL PLACES	# FOODS	PERCENT
631	22:5n-3	g	fatty acids, polyunsaturated, 22:5 n-3, docosapentaenoic	3	5541	97.38
636	TPST	mg	total plant sterol	0	695	12.21
638	STIG	mg	stigmasterol	0	507	8.91
639	CAMPSTR	mg	campesterol	0	290	5.10
641	SITSTR	mg	beta-sitosterol	0	503	8.84
645	MUFA	g	fatty acids, monounsaturated, total	3	5376	94.48
646	PUFA	g	fatty acids, polyunsaturated, total	3	5374	94.45
652	15:0	g	fatty acids, saturated, 15:0, pentadecanoic	3	1918	33.71
653	17:0	g	fatty acids, saturated, 17:0, heptadecanoic	3	1967	34.57
654	24:0	g	fatty acids, saturated, 24:0, tetracosanoic	3	1741	30.60
662	16:1t	g	fatty acids, monounsaturated, 16:1t, hexadecenoic	3	1731	30.42
663	18:1t	g	fatty acids, monounsaturated, 18:1t, octadecenoic	3	1572	27.63
664	22:1t	g	fatty acids, monounsaturated, 22:1t, docosenoic	3	2707	47.57
666	18:2i	g	fatty acids, polyunsaturated, 18:2i, linoleic, octadecadienoic	3	1358	23.87
669	18:2tt	g	fatty acids, polyunsaturated, 18:2t,t , octadecadienenoic	3	1068	18.77
670	18:2cla	g	fatty acids, polyunsaturated, conjugated, 18:2 cla, linoleic, octadecadienoic	3	1359	23.88
671	24:1c	g	fatty acids, monounsaturated, 24:1c, tetracosenoic	3	1542	27.10
672	20:2cc	g	fatty acids, polyunsaturated, 20:2 c,c eicosadienoic	3	1836	32.27
673	16:1c	g	fatty acids, monounsaturated, 16:1c, hexadecenoic	3	1767	31.05
674	18:1c	g	fatty acids, monounsaturated, 18:1c, octadecenoic	3	1558	27.38
675	18:2ccn-6	g	fatty acids, polyunsaturated, 18:2 c,c n-6, linoleic, octadecadienoic	3	2436	42.81
676	22:1c	g	fatty acids, monounsaturated, 22:1c, docosenoic	3	2778	48.82
685	18:3cccn-6	g	fatty acids, polyunsaturated, 18:3 c,c,c n-6, g-linolenic, octadecatrienoic	3	5383	94.60
687	17:1	g	fatty acids, monounsaturated, 17:1, heptadecenoic	3	1787	31.41
689	20:3	g	fatty acids, polyunsaturated, 20:3, eicosatrienoic	3	3368	59.19
693	TRMO	g	fatty acids, total trans-monoenoic	3	1441	25.33
695	TRPO	g	fatty acids, total trans-polyenoic	3	1360	23.90
696	13:0	g	fatty acids, saturated, 13:0 tridecanoic	3	449	7.89

NUTRIENT CODE	NUTRIENT SYMBOL	UNIT	NUTRIENT NAME	# DECIMAL PLACES	# FOODS	PERCENT
697	15:1	g	fatty acids, monounsaturated, 15:1, pentadecenoic	3	1640	28.82
802	TMOS	g	total monosaccharides	2	1880	33.04
803	TDIS	g	total disaccharides	2	1866	32.79
851	18:3cccn-3	g	fatty acids, polyunsaturated, 18:3 c,c,c n-3 linolenic, octadecatrienoic	3	4738	83.27
852	20:3n-3	g	fatty acids, polyunsaturated, 20:3 n-3	3	5186	91.14
853	20:3n-6	g	fatty acids, polyunsaturated, 20:3 n-6, eicosatrienoic	3	5169	90.84
855	20:4n-6	g	fatty acids, polyunsaturated, 20:4 n-6, eicosatrienoic	3	3065	53.87
856	18:3i	g	fatty acids, polyunsaturated, 18:3i, linolenic, octadecatrienoic	3	1271	22.34
857	21:5	g	fatty acids, polyunsaturated, 21:5	3	956	16.80
858	22:4n-6	g	fatty acids, polyunsaturated, 22:4 n-6, docosatetraenoic	3	1461	25.68
859	24:1undiff	g	fatty acids, monounsaturated, 24:1undifferentiated, tetracosenoic	3	1140	20.04
860	12:1	g	fatty acids, monounsaturated, 12:1, lauroleic	3	351	6.17
861	22:3	g	fatty acids, polyunsaturated, 22:3,	3	936	16.45
862	22:2	g	fatty acids, polyunsaturated, 22:2, docosadienoic	3	1000	17.57
902	TOmega n-3	g	fatty acids, polyunsaturated, total omega n-3	3	1973	34.67
903	TOmega n-6	g	fatty acids, polyunsaturated, total omega n-6	3	1979	34.78

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