FOOD STANDARDS
Australia • New Zealand
Te Mana Kounga Kai – Ahitereiria me Aotearoa

AUSNUT 2023 – About the foods and nutrients

September 2025

Overview

AUSNUT 2023 provides the food composition data used in the 2023 National Nutrition and Physical Activity Study (ABS, 2025) to translate reported food and dietary supplement consumption into intakes. It also includes supporting information to help interpret the data and compare results with previous surveys.

Developing the food nutrient dataset

The food nutrient dataset was developed following a staged approach. This involved creating a core dataset that drew on data from our existing data holdings, which was expanded to include new analytical data and additional foods using a range of methods.

The 3,741 foods in AUSNUT 2023 reflect the foods available in Intake24, which respondents used to report their food intake during the study, along with ingredients needed in recipe calculations.

The 58 'nutrients' in AUSNUT 2023 were chosen based on the study's reporting requirements and include traditional nutrients like vitamins and minerals, and other components of interest, like energy and caffeine.

Developing the core dataset

Creating the dataset using existing data

FSANZ undertook a reconciliation process to identify which foods in Intake24 were present in our existing food composition publications the Australian Food Composition Database (AFCD-2) and AUSNUT 2011-13.

Development of the AUSNUT 2023 food nutrient dataset started with nutrient data from AFCD-2 (FSANZ, 2022), for foods in Intake24 and foods that are common ingredients in other foods, such as flour. AFCD-2 contains mostly high-quality analytical data and provided a sound basis for creating further nutrient profiles. Visit the AFCD for more information on its development and content.

The initial AUSNUT 2023 dataset was then expanded to include nutrient data for foods in Intake24 that were not in AFCD-2 but were present in the AUSNUT 2011-13 dataset, where appropriate. All AUSNUT 2011-13 foods used in AUSNUT 2023 were reviewed and updated to ensure the nutrient profile and metadata reflected products available during the study and met the requirements of the study.

Incorporating new analytical data

The core dataset was updated to include analytical data from six programs undertaken by FSANZ since the release of AFCD-2 to improve the quality of the underlying dataset. These include:

- 2019 NNPAS program
- 2019-20 Key foods program
- 2020 Key foods program
- 2021-22 Key foods program
- 2022-23 Key foods program

These programs focused on providing data for:

- commonly consumed foods that are major sources of several nutrients in an Australian's diet
- foods that were likely to be a major source of a single nutrient in an Australian's diet
- foods for which we held out-dated, limited or no Australian-derived analytical data
- foods that allowed verification of our recipe assumptions
- foods that were new to the market.

The dataset was also updated to include analytical data provided by external stakeholders including:

- 2019 Curtin University vitamin D analytical program
- 2020 Hort Innovation potato analytical program (Hort Innovation, 2021)
- 2020 Hort Innovation fruit and vegetable analytical program (Hort Innovation, 2022)

The new analytical data included foods which were not previously part of the core dataset, as well as updates to nutrient profiles of foods which had already been captured in the dataset.

Notes on the core dataset

Analytical data

Laboratory analysis represents the nutrient content of a particular sample of foods and ingredients, determined at a particular time. The nutrient composition of foods and ingredients can vary substantially between batches and brands because of several factors, including changes in season, changes in formulation, processing practices and ingredient source.

Analysis of nutrients is also associated with its own uncertainty. This can be particularly significant when levels of a nutrient are low and close to the level at which they can be reliably quantified (the 'limit of reporting' or LOR).

Branded products

Brands are included in AUSNUT food names where they provide clarity among a range of similar products, such as energy drinks. Any reference to a brand name within AUSNUT is not to be taken as an authoritative statement of the composition of that product, due to changes in formulation that may have occurred since our data was generated, or due to the limitations noted above with analytical data. If you require current data on a specific branded product you should contact the manufacturer of that product.

Developing additional nutrient profiles

Nutrient profiles were developed using a range of techniques for the remaining foods on the Intake24 food list, including:

- recipe calculations
- modifying an existing nutrient profile using label data and imputation
- borrowing data.

Recipe calculations

Recipe calculations were the most common technique used for generating additional nutrient profiles. These were typically used to generate nutrient data for:

- home prepared and commercial mixed dishes such as pasta meals, stir-fries and casseroles
- takeaway and fast food products such as burgers, sushi and sandwiches
- cakes, biscuits and slices
- prepared beverages such as coffees and smoothies
- cooked meats, eggs, fish and vegetables with added oils
- some processed foods where no suitable analytical data were available
- 'not further defined' foods and beverages.

The recipe method used for each food was dependent on the type of food, the ingredient and preparation information available, and whether analytical data for a similar food was available and is comparable to that used internationally for similar purposes (Charrondiere, U.R., 2021).

For a complete list of recipes used in AUSNUT 2023, including associated retention and weight change factors, refer to AUSNUT 2023 – Food nutrient recipes (Excel, 600KB) and AUSNUT 2023 – Nutrient retention factors (Excel, 281KB).

Recipe types

Traditional recipes

Recipes for many foods were developed using traditional-style recipes such as those found in cookbooks or online recipe sites. This approach used the amount of each ingredient to create a recipe for uncooked foods such as sandwiches and milkshakes and cooked foods such as cakes and stir-fries. Although common cooking practices were used as a guide, the choice of recipes used to prepare nutrient data was somewhat subjective. The extensive variation in recipe ingredients and methods meant streamlined recipes were needed to cover many variants of a basic dish. Weight change and retention factors were used to account for changes to water, vitamin and mineral content that may occur during the cooking or preparation process.

Proportional recipes

Recipes created for processed products were developed using label ingredient lists. This involved adjusting the proportion of each major ingredient until the final nutrient profile aligned with the nutrient data on the product's nutrition information panel (NIP). This process may not reflect the exact formulation of the product as it does not generally take

into account ingredients such as food additives which do not contribute to the nutrient content of the food.

Grouped ingredient recipes

Recipes were also used to create nutrient profiles for a group of ingredient foods that were used in other recipe calculations. For example, in all home prepared casseroles containing vegetables, a single recipe food of 'Mixed vegetables, for use in casserole & curry recipes' was used. This recipe food included a range of vegetables that would commonly be used in a home prepared casserole.

Undefined recipes

Undefined recipes were developed where:

- a respondent was unable to identify an exact variety of a food e.g. the nutrient profile for 'Grape, raw, not further defined' drew on nutrient data for 3 types of grapes including white, red and black varieties weighted according to their approximate market share. All four of these foods were available for selection in the dietary recall tool.
- the level of detail was not available in the dietary recall tool e.g. the nutrient profile for 'Orange, peeled, raw' drew on the nutrient profiles for Valencia and navel varieties, weighted according to their approximate market share. The individual varieties were not available for selection in the dietary recall tool.
- a specific variety of ingredient used in recipes could not be clearly defined e.g. a homemade cake could be prepared using a wide range of milk types, so the nutrient profile for 'Milk, cow, fluid, unflavoured, not further defined' drew on nutrient data for regular fat, reduced fat and skim varieties weighted according to consumption patterns observed in the study.

Due to the weighting techniques used to develop undefined lines, the resulting nutrient data do not fully reflect the nutrient profile of a food consumed.

Notes on recipes

Discretionary salt use

The recipes for home prepared foods do not capture the use of salt during cooking or added at the table, except where salt is needed for reasons other than flavour (e.g. bread dough), as discretionary salt use was not captured in the study. Therefore, sodium values for these foods are likely to be underestimated in AUSNUT 2023.

Fats and oils

The recipes for home prepared meats and vegetables cooked with fat/oil do not capture specific fat types. Instead, these recipes use a nutrient profile for a not further defined fat/oil which weights the different fat/oil types reported in the short answer survey responses.

Nutrient retention factors

Retention factors are applied to recipes to account for nutrient losses when a food undergoes a preparation or cooking process. The retention factors used in our recipes were reviewed and updated for AUSNUT 2011-13. As no significant new data sources

have become available since that time, the same set of retention factors was adopted for use in AUSNUT 2023 (AUSNUT, 2011-13). A complete list of nutrient retention factors used in AUSNUT 2023 is available in AUSNUT 2023 – Nutrient retention factors (Excel, 281KB).

Weight change factors

Weight change factors used in AUSNUT 2023 recipes were based on the 2011-13 dataset and updated for internal consistency e.g. factors for stir-fries, casseroles and curries were aligned across meat and sauce variations, where appropriate. Factors were adjusted for some foods until the moisture value in the recipe food was close to the moisture value of a similar analysed food where available. Due to the limited evidence base for these factors, they should be regarded as indicative only. Weight change factors are included in AUSNUT 2023 – Food nutrient recipes (Excel, 600KB) along with other details of the recipes.

Modifying an existing nutrient profile using imputation and label data

Where a new nutrient profile was needed for a food that was similar to another food in the dataset, except for a particular characteristic, a copy of the existing nutrient profile was made. The nutrient profile for the new food was then modified to account for the different characteristic. This approach was used for many of the low or reduced fat, reduced salt, fortified, reduced alcohol or intense sweetened varieties of products consumed. These characteristics were most commonly modified using imputation and label data.

Imputation

Imputation of data refers to the assumption that nutrient values for one food will be the same as a closely related food. For example, the nutrient profile of salt reduced butter could be assumed similar to the nutrient profile of regular butter, except for the sodium content.

Imputation can also be used to assume that some foods contain none of a particular nutrient, based on the knowledge of the composition of the food. For example, the vitamin E content of soft drinks has been imputed as zero, because vitamin E is a fat soluble vitamin and soft drinks do not contain fat. Their labels also indicate they don't contain added vitamin E. This approach was commonly used for caffeine, folic acid, retinol and vitamins B12 and D values.

Imputation has only been used where FSANZ has confidence in the validity of the assumptions made.

Label data

This technique involved imputing nutrient data from a similar food or beverage in the core dataset, then updating key nutrient values using NIP data from product labels.

For example, to develop the nutrient profile for 'Breakfast cereal, whole wheat, biscuit, added vitamins B1, B2 & B3', the core dataset food 'Breakfast cereal, whole wheat, biscuit, no added sugar or salt, unfortified' was used as a basis. The values for B1, B2, B3, total sugar and sodium were modified to reflect the values presented in the NIP of commonly consumed brands of whole wheat biscuits with added B vitamins. Other nutrient

modifications might also have been necessary, such as adjusting the moisture, protein, fibre or carbohydrate contents to account for the addition of sugar.

Wherever possible, nutrient values were averaged over a number of different brands for similar products, unless the nutrient profile was developed to represent a single brand.

Notes on label data

Accuracy

Using label information to generate nutrient data for foods assumes that the label information is reliable. While there have been no wide-scale assessments of the reliability of NIP data, a small study conducted between 2004 and 2005 analysed 350 foods and compared the analysed values with the values presented on the product label. The study found a discrepancy between -13% to +61% for individual nutrient values (Fabiansson, 2006). A small study conducted by FSANZ between 2008 and 2009 analysed 363 foods also found 60% of analysed sodium values were within 20% of the level reported on the label (FSANZ, 2009).

Overages

Where label data has been used to assign a vitamin or mineral concentration for fortified foods, the values for added vitamins and minerals declared on labels may underestimate actual values as extra nutrient may be added to ensure the declared levels, at a minimum, are achieved throughout the life of the product (known as 'overages'). No allowance was made for any fortificant overages when using label data, so values reported in AUSNUT 2023 for these nutrients should be regarded as indicative.

Borrowed data

Whole nutrient profiles were generally borrowed for foods imported into Australia where the nutrient composition is expected to be consistent with data reported by international sources or scientific literature such as dried herbs and spices. Borrowed data was also used to fill gaps for a small number of nutrients in a food where most data were based on analysis.

Where necessary, values were converted to the units and modes of expression being used in the study.

Other methods

A small proportion of nutrient profiles were developed using other methods, often combining elements of the methods discussed above. These foods form a small portion of the dataset, with the approaches taken based on the individual food and the best available information at the time.

Allocating identification codes, names and descriptions

Each food in AUSNUT 2023 was assigned codes and descriptive information to help users easily identify what they are looking for and to link data across files.

Information on food IDs, food names and descriptions is available in AUSNUT 2023 – Food details (Excel 1.5MB).

Classification codes are also explained in more detail in AUSNUT 2023 – About the classifications (PDF 271KB).

Matching foods with the 2011-13 AHS

The AUSNUT 2023 to 2011-13 Matching file (Excel, 374MB) is available to assist users to compare nutrient profiles across surveys.

Dataset validation

The nutrient data underwent an extensive internal and external data validation process.

Internal validation

FSANZ undertook a series of internal data validation activities both as individual foods were developed, and following compilation of the complete dataset. Some activities focused on individual foods, while others focussed on specific nutrients, food categories, recipes, factors and system calculations.

FSANZ also undertook targeted validation activities focusing on the most frequently consumed foods and foods that were most likely to drive nutrient intakes.

External peer review

The AUSNUT 2023 food nutrient dataset underwent an expert peer review process at multiple points throughout its development. The review initially focused on nutrients that were not reported in AUSNUT 2011-13, such as vitamin D, and data which was not part of previously published datasets, such as newly generated analytical data and profiles developed for additional foods. However, a comprehensive whole of dataset peer review was also performed.

Research projects

AUSNUT 2023 contains fewer foods than previous AUSNUT datasets. FSANZ undertook several projects to understand the potential impact of reducing the level of detail captured for some food categories on dietary intake assessments for the study. The outcomes of these projects informed the final food list.

The projects focussed on the impact of:

- replacing individual fat or oil types for meats and vegetables cooked with added fat with a generic 'fat not further defined' version.
- reducing the fat trimming options for red meats i.e. fully-trimmed, semi-trimmed or untrimmed, from three levels to two or one.
- replacing individual milk fat contents for milk based beverages such as coffee, tea, flavoured milk and milk shakes, and porridge with a generic 'milk, fat nor further defined' version for major milk types (i.e. cow's, soy etc.).
- reducing the number of fortified lines for commonly fortified food categories such as breakfast cereals and beverage bases.

- reducing the number of specific beef, lamb, pork and poultry based mixed dishes such as casseroles, curries and stir-fries by substituting with generic versions e.g. combining with and without vegetables or commercial and homemade varieties.
- reducing the number of specific pasta dishes and salads by substituting with generic versions e.g. combining with and without vegetables or commercial and homemade varieties.

The final project reports will be available on the FSANZ website.

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