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

AUSNUT 2023 – About the dietary supplements

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 dietary supplement nutrient database

For the 2023 study, the term 'dietary supplement' refers to products defined as 'complementary medicines' under the Therapeutic Goods Regulations 1990 that are not intended for inhalation or use on the skin. They include products containing nutrients of interest to the study, such as multivitamins and fish oil.

The AUSNUT 2023 dietary supplement database contains 39 nutrient values for 1,350 dietary supplements reported during the study.

Developing the dietary supplement nutrient database

The database was developed using a recipe calculation approach. To undertake these calculations, information was required on the:

- dietary supplement ingredients and their proportions
- nutrient content of each of the ingredients
- dosage type and amount.

The 39 nutrients included in the AUSNUT 2023 dietary supplement database largely align with those reported for foods, with a few exceptions. Nutrients were not included where they:

- would contribute very little, if at all, to overall nutrient intakes (e.g. sugar and starch)
- were unlikely to be present in supplements in quantifiable amounts (e.g. natural folates)
- were not needed in the calculation of nutrients to be reported from the study (e.g. tryptophan).

The 'nutrients' include traditional nutrients like vitamins and minerals, and other components of interest, like caffeine.

Where possible, FSANZ drew on the dietary supplement data from the Australian Register of Therapeutic Goods (ARTG), and followed the process outlined in figure 1.

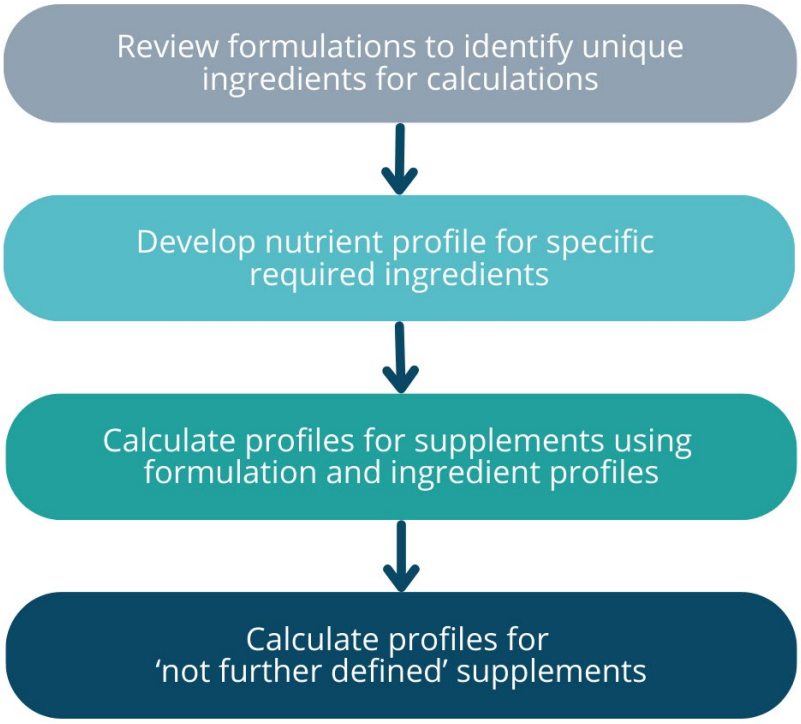

Figure 1. Process for developing the dietary supplement database.

1. Developing a list of unique ingredients

FSANZ reviewed the formulation data, to identify a list of unique active ingredients containing nutritionally relevant levels of a nutrient of interest to the study. This involved removing excipient[1] and duplicate ingredients from the original list and ingredients that either did not contain any nutrients of relevance to the study, or contained levels so low they would have little impact on population nutrient intake estimates.

Where nutrient data was not available for an ingredient (e.g. some plant/herbal ingredients), FSANZ reviewed the scientific literature to determine whether they were known to contain nutrients of interest. This process resulted in a final list of 433 unique ingredients.

2. Developing nutrient profiles for unique ingredients

A complete nutrient profile was developed for each of the 433 unique ingredients using a range of techniques. FSANZ imputed nutrient profiles for ingredients available in the AUSNUT 2011-13 dietary supplement dataset where possible. Where this was not possible FSANZ relied on the use of:

[1] Ingredients found in dietary supplements that do not have a therapeutic role. They may be added to help bind or dissolve a dietary supplement or be used to add colour.

- molecular formula and formulation information
- reference books and scientific literature
- product labels and company websites.

Nutrient values were assigned to each ingredient on a per 100 mg basis. Where a nutrient being reported in the study was not present in an ingredient, a zero value was assigned.

Molecular formula and formulation information

Where the molecular formula of an ingredient was known, it was used to determine the proportion of each of the relevant nutrients in each ingredient.

For example, the molecular formula for the ingredient calcium ascorbate dihydrate was used to determine the calcium and vitamin C (ascorbic acid) content as shown below:

Molecule	**Weight (u)**
calcium ascorbate dihydrate **Ca($C_6H_7O_6$)$_2$**.2H_2O	426.3
Ca	40.078
C	12.01
H	1.008
O	16

% of **Ca** = (40.078 / 426.3) * 100 = 9.4%

% of **Vitamin C** = (350 / 426.3) * 100 = 82.16%

Where vitamins (e.g. vitamins A and E) were expressed in International Units, these values were converted to the appropriate study unit for reporting according to NHMRC Nutrient Reference Values for Australia and New Zealand 2005 (NHMRC, 2006).

Some examples of the final nutrient profile for selected nutrients in a series of vitamin C containing ingredients are shown below.

Dietary Supplement Ingredient	**Vitamin C (mg/100 mg)**	**Calcium (Ca) (mg/100 mg)**	**Sodium (Na) (mg/100 mg)**
Ascorbic acid	100	0	0
Calcium ascorbic dihydrate	82.16	9.4	0
Sodium ascorbate	88.39	0	11.6
Malpighia punicifolia	17	0	0

For a complete list of unique dietary supplement ingredients and their nutrient profiles refer to AUSNUT 2023 – Dietary supplement ingredient profiles (Excel, 127KB).

3. Calculating nutrient profiles for dietary supplements

Where the respondent was able to identify the exact dietary supplement consumed, nutrient profiles were developed using the formulation data provided by the TGA and the nutrient profiles of dietary supplement ingredients generated by FSANZ.

The nutrient profile of each dietary supplement consumed was calculated by multiplying the proportion of the nutrient in each ingredient by the ingredient amount, then summing the total of each nutrient where it was present in more than one ingredient. For example, for a supplement containing four sources of vitamin C, its vitamin C and calcium content would be calculated as follows:

Ingredient	**Amount**	**Vitamin C**		**Calcium**	
	(mg/ tablet)	(mg/100 mg ingredient)	(mg/ tablet)	(mg/100 mg ingredient)	(mg/ tablet)
Ascorbic acid	50	100	50	0	0
Calcium ascorbic dihydrate	100	82.16	82.16	9.4	9.4
Sodium ascorbate	50	88.39	44.2	0	0
Malpighia punicifolia	50	17	8.5	0	0
Total supplement			**184.86**		**9.4**

In contrast to the nutrient values for foods which are expressed on a per 100 g basis, nutrient values for dietary supplements are presented on a per dose basis. Using the example above, this supplement contains 184.86 mg of vitamin C and 9.4 mg of calcium in each tablet.

For herbal supplements, most nutrient profiles will be a series of zero values unless the herbal supplement contains ingredients with known nutrient values (e.g. *Malpighia punicifolia* and vitamin C). For homoeopathic dietary supplements, all values in the nutrient profile have been imputed zero due to the highly diluted nature of these products.

Where the amount of an ingredient was missing, the gap was filled using values from sources such as company websites, products labels, similar products and other credible websites.

4. Assigning classifications to dietary supplements

Each dietary supplement was assigned to a 5-digit group from the AUSNUT 2023 – Food and dietary supplement classification system (Excel, 76KB) based on the major ingredient/s and dose unit.

Read more about the development of the classification system in AUSNUT 2023 – About the classifications (PDF, 271KB).

5. Calculating nutrient profiles for 'not further defined' dietary supplements

Where a respondent was unable to identify the exact dietary supplement consumed, a nutrient profile was generally determined by creating a 'not further defined' (NFD) profile representing a generic supplement of the same type and dose unit. The nutrient profile was developed using a recipe approach with all reported supplements within a 5-digit group used as the ingredients. An example is provided below for 341101 – Dietary supplement, folic acid supplement, not further defined, tablet.

ID	Ingredient name	Dose unit	Ingredient weight	Ingredient classification
17706	Megafol 5 Folic Acid 5 mg Tablet Bottle	Tablet	8.333	34110 – Folic acid supplements
311405	Blackmores Folate	Tablet	50.000	34110 – Folic acid supplements
316114	Folic Acid Tablet	Tablet	16.667	34110 – Folic acid supplements
385797	Nature's Own Folic Acid 500mcg	Tablet	25.000	34110 – Folic acid supplements

In cases where one dietary supplement within a 5-digit group was reported significantly more frequently than all others, undefined dietary supplements of the same type and dose unit were assigned directly to that dietary supplement.

Allocating identification codes to NFD dietary supplements

Most dietary supplements use their AUST-L number for identification purposes and for linking data across files. This is a unique numeric code found on a dietary supplement label which indicates the dietary supplement is listed on the TGA's Australian Register of Therapeutic Goods (ARTG). However, a small number of dietary supplements are assigned an identifying code using the 5-digit minor classification as described in AUSNUT 2023 – About the classifications (PDF, 271KB).

Database validation

The nutrient data in the AUSNUT 2023 dietary supplement database has undergone an extensive data validation process.

Internal validation of nutrient data

Some of the routine validation activities undertaken by FSANZ include checking:

- all dietary supplements have a value for all nutrients to be reported
- the dietary supplement contains the nutrients identified in the supplement name. (e.g. a calcium supplement contains calcium, a multivitamin contains more than one vitamin)

- the dietary supplement contains the amount of nutrient identified in a supplement name (e.g. a supplement called 'Vitamin C 500' contains approximately 500 mg vitamin C per dose unit)
- the sum of all nutrients is less than the mass of a dose unit.

FSANZ focussed more detailed checks on the most frequently consumed supplements.

External peer review of nutrient data

FSANZ provided the AUSNUT 2023 dietary supplement nutrient database to a food composition expert for peer review. The review and validation processes were conducted at multiple points throughout the development of the database.

References

ABS (2025) National Nutrition and Physical Activity Study 2023, Australian Bureau of Statistics, Canberra. Available at About the Intergenerational Health and Mental Health Study | Australian Bureau of Statistics

NHMRC (2006) Nutrient Reference Values for Australia and New Zealand Including Recommended Dietary Intakes, National Health and Medical Research Council https://www.eatforhealth.gov.au/nutrient-reference-values Accessed 2024

TGA Australian Register of Therapeutic Goods Database, Therapeutic Goods Administration, https://www.tga.gov.au/resources/artg Accessed 2024