

Calculations in the NPC

Nutrition Panel Calculator User Guide

2026

Acknowledgement of country

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Summary

The Nutrition Panel Calculator (NPC) is an online tool which can help to create a Nutrition Information Panel (NIP) for food labels. It is supported by data from FSANZ NPC dataset.

This document outlines the calculations used within the tool.

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Programmed calculations

The Nutrition Panel Calculator (NPC) can calculate a nutrition information panel (NIP) for a food label following 3-steps.

Step 1 – Create recipe by adding ingredients and amounts

Calculations in Step 1 apply to each *individual ingredient*.

a) Locate nutrient profiles for ingredients

The energy and nutrient values per 100 g from the NPC dataset or from custom ingredients are displayed when ingredients are added to the recipe.

b) Convert all amounts and units to grams

Once ingredients are added to the recipe, enter the amount of each ingredient as either grams, kilograms, millilitres or litres. Note: if any unit other than grams is selected, the NPC will convert the amount into a gram equivalent for further calculations, but the converted weights will not be shown on screen.

Example: when entering 1 litre of stock, the NPC uses the specific gravity to convert the 1 litre into grams.

$$\begin{aligned} 1 \text{ litre of stock} &= 1000 \text{ mL} \times \text{specific gravity of stock} \\ &= 1000 \times 1.02 \\ &= 1020 \text{ g} \end{aligned}$$

c) Calculate the nutrient contribution from each of the ingredients

The NPC will then:

- add the total weight of all the ingredients in grams
- calculate how much each ingredient contributes to the overall nutrient values for 100 g of the recipe.

Assuming a total recipe weight of 1,572 g and using energy from stock as an example, these values are determined by the following equation:

$$\begin{aligned} \text{Energy from stock} &= \text{Energy per 100 g} \times \text{Weight of stock in recipe} \div \text{Total weight of recipe} \\ &= 31 \text{ kJ} \times 1020 \text{ g} \div 1571 \text{ g} \\ &= 20.13 \text{ kJ} \end{aligned}$$

The NPC then calculates the energy and nutrient values for the remaining ingredients and displays it in line with each ingredient.

d) Sum all nutrient contributions

The values calculated in Step 1c are then added to give the total energy per 100 g of the recipe. The NPC repeats this process for the remaining nutrients and displays it in the 'Total per 100 g' row. For this example, let's assume noodles were added to the stock for a total of 233.93 kJ per 100 g.

Step 2 – Enter recipe weights

A weight change factor is only needed if the recipe's weight changes in moisture content during cooking. When needed, the NPC uses values calculated in Step 1, and additional information entered in Step 2 (weight change) to calculate NIP values.

Calculations from Step 2 onwards apply to the *combined ingredients*.

a) Apply the weight change factor

If a recipe loses 8% of its weight during cooking, the energy and nutrient values need to be adjusted accordingly. This is determined by the following equation, using the total energy calculated in Step 1d as an example:

$$\begin{aligned}\text{Energy after weight change} &= \text{Energy per 100 g} \times 100 \div (100 + \text{Weight change factor}) \\ &= 233.93 \text{ kJ} \times 100 \div (100 + -8) \\ &= 254.27 \text{ kJ}\end{aligned}$$

The adjusted energy and nutrient values from this step are not shown on-screen.

Read more about how to determine [weight change factors](#).

Step 3 - Generate Nutrition Information Panel

a) Convert from per 100 g to per 100 mL for liquids

If the final product is a liquid, the NPC will convert the values it generates up to this point from per 100 g to per 100 mL using the following equation. This example uses the total energy calculated in Step 2a:

$$\begin{aligned}\text{Energy converted from per 100 g to per 100 mL} & \\ &= \text{Energy per 100 g} \div 100 \times (100 \text{ g} \times \text{specific gravity of the final product}) \\ &= 254.27 \text{ kJ} \div 100 \times (100 \times 1.01) \\ &= 256.81 \text{ kJ}\end{aligned}$$

b) Calculate energy and nutrient values per serve

The values calculated to this point are per 100 g or 100 mL. The NPC will calculate the values per serve using the following equation:

Energy per 100 g or per 100 mL (depending on whether the final product is a solid or liquid)

$$= \text{Energy per 100 g} / 100 \times (\text{serve size in mL} \times \text{specific gravity of the final product})$$

$$= 254.27 \text{ kJ} / 100 \times (250 \times 1.01)$$

$$= 642.03 \text{ kJ}$$

c) Determine number of significant figures and decimal places

Using the results from Steps 3a and 3b, the NPC applies the appropriate number of significant figures to align with the requirements of [Standard 1.2.8](#) as closely as possible.

Additional manual calculations

Some manual calculations may be required to ensure accurate information is entered into the NPC. These calculations are detailed below.

Household measures

Energy and nutrient values must be entered into the NPC in either grams, kilograms, millilitres or litres. More information is available in the [How to create a Nutrition Information Panel document on the FSANZ website](#). Many recipes use common household measures such as cups or tablespoons. The following method can be used to convert to grams, using one cup of plain white flour as an example:

1 metric cup = 250 mL and the density of plain white flour is 0.54.

To get the weight in grams, multiply 250 mL by 0.54:

$$250 \times 0.54 = 135 \text{ g}$$

Enter an amount of 135 g instead of 1 cup of plain white flour.

The generic equation is:

$$\text{Metric measure in mL (cup, tablespoon, teaspoon)} \times \text{specific gravity} = \text{weight in grams}$$

The densities of a range of common foods are included in the [AUSNUT 2023 food measures database](#) which may be useful for this purpose.

Edible portion

Energy and nutrient values must be entered into the NPC per 100 g edible portion (EP) as outlined in the [How to create a Nutrition Information Panel document on the FSANZ website](#). The following provides an example of how to calculate the EP of both raw and cooked meat. Note that the percentage EP (%EP) of a particular food only needs to be calculated once. The same factor can be used to get the edible component of any nominated quantity of that food 'as purchased'.

Example steps for lamb chops

a) Record the weight of the lamb chops before and after trimming any inedible components such as bone and gristle.

For example, the initial total weight of lamb chops is 200 g. After trimming the lamb chops to remove the inedible portion, the edible component weighs 158 g.

Using this information, the %EP is calculated as follows:

$$\begin{aligned}\%EP &= \text{Weight of edible component} \div \text{Total initial weight} \times 100 \\ &= 158 \div 200 \times 100 \\ &= 79\%\end{aligned}$$

b) To determine the edible component in grams of any nominated quantity of the same food **as purchased raw**, use the following equation:

$$\text{Raw edible component (g)} = \%EP \times \text{quantity of as purchased food}$$

For example, to calculate the edible portion of 500 g of lamb chops 'as purchased' raw:

$$\begin{aligned}\text{Raw edible component (g)} &= (79 \div 100) \times 500 \text{ g} \\ &= 395 \text{ g}\end{aligned}$$

c) The weight of the cooked edible component can be determined using the known weight of the raw **as purchased** food, the %EP and the percentage weight loss, as follows:

$$\text{Cooked edible component (g)} = \text{Quantity of raw 'as purchased' food} \times \%EP \times (100 - \% \text{ weight loss}) \div 100$$

For example, to calculate the cooked edible portion of 500 g of raw lamb chops **as purchased**, with an EP of 79% and a weight loss factor of -31% the calculation is

$$\begin{aligned}\text{Cooked edible component (g)} &= 500 \times (79 \div 100) \times (100 - 31) \div 100 \\ &= 273 \text{ g cooked}\end{aligned}$$

The cooked edible component of 500 g of lamb chops **as purchased** will be 273 g.

Weight change factors

Calculate weight change factors specific to each recipe using the following equation:

$$\begin{aligned}\text{Weight change factor (\%)} &= (\text{Weight of cooked food} - \text{Weight of raw food}) \div \\ &\quad \text{Weight of raw food} \times 100\end{aligned}$$

For example, if 100 g of a raw grain weighs 300 g after boiling, the weight change factor can be calculated as follows:

$$\begin{aligned}\text{Weight change factor (\%)} &= (300 - 100) \div 100 \times 100 \\ &= 200\%\end{aligned}$$