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Balanced Nutrition Index™ (BNI™)

[<Normal page] [**PEREZGONZALEZ Jose D (2011)**. *Balanced Nutrition Index™ (BNI™)*. Journal of Knowledge Advancement & Integration ([ISSN 1177-4576](#)), 2011, pages 20-21.]

The Balanced Nutrition Index™

The Balanced Nutrition Index™ (BNI™)² is a technological application for assessing the nutritional balance of foods, recipes and diets. It uses dietary recommended intakes (RDIs) in order to analyse the nutrition composition of foods and assess their nutritional balance. Thus, it is able to index foods according to such balance. The BNI underlying principle is quite simple: subtract actual macronutrients contribution to foods from 'ideal' macronutrients contribution, add the differences and, in so doing, compile a unique figure that allows indexing a given food product according to its degree of nutritional balance (or, rather, unbalance). (*See, for example, Pérezgonzález, 2007a¹.*)

A quick description

- The **BNI™**, as its name says, 'works' within the concept of [balanced nutrition](#), rather than alternative concepts such as balanced diets, varied diets, healthy diets or healthy lifestyles (*Pérezgonzález, 2011a⁵*). It is, if you wish, a 'mathematical' approach to food indexing, not to dieting.
- The main "theoretical" background for the index are [recommended dietary intakes \(RDIs\)](#). In order to enhance standardization, however, the index works with a single set of RDIs, which is an average result obtained from other modern Western RDIs (*Pérezgonzález, 2011b⁶*). However, by changing the RDIs, it may be used for analyzing food products according to particular national standards.
- The index works with macronutrients only, although, given its social importance, it also includes sodium. Most of this nutritional information is readily available on nutrition labels, or commonly reported in food databases (such as USDA's). Protein, carbohydrate, sugars, fat, saturated fat, fiber and sodium are the nutrients that the index uses.
- The index works by calculating the percentage contribution of each nutrient to 100 grams of food. It then compares this against the percentage contribution expected from an 'ideal' balanced food ('ideal' meaning according to RDIs). Any macronutrient differences in excess or deficiency from this 'ideal' contribution is added up (as natural numbers) into a single figure, representing the accumulated macronutrient unbalance. Adequately balanced foods will show an index of 'zero' (BNI™ 0.0), while the greater the numerical index the more unbalance the food is (eg, a typical chocolate bar is around BNI™ 124.00).
- The numerical figure is further qualified with signs and letters, which identify the most important macronutrient. These signs and letters not only indicate the food's main nutritional bias, but also helps differentiate between foods with similar numerical results. The possible qualifications are the following: 'p', excess of protein, '-p' deficiency in protein, 'c' excess of carbohydrate, '-c' deficiency in carbohydrate, 's' excess of sugars, 'f' excess of fat, '-f' deficiency in fat, 'sf' excess of saturated fat, 'fb' excess of fiber, '-fb' deficiency in fiber, and 'na' excess of sodium.
- Therefore, the BNI™ appears as a numerical figure indicating relative degree of nutritional unbalance, and a letter code indicating the main nutritional bias in the food. This index is sensible enough as for allowing 'indexing' food products according to their nutritional balance⁸.
- The BNI™ was first formulated in 2007 and used a 'mid-point' calculation, resulting in larger numerical indexes and a subjective assessment of those indexes closer to 'zero' as 'balanced' (eg, *Pérezgonzález, 2007a¹, 2007b²*). The formula was changed to a 'range' calculation in 2008. With this advanced formulation, only macronutrient contributions which fall outside an

RDI range count towards unbalance, making the index more accurate, as it also eliminates any subjective assessments (ie, a balanced food is that with BNI™ 0.0) (*See, for example, Pérezgonzález, 2008a³, 2008b⁴.*)

References

1. **PÉREZGONZÁLEZ Jose D (2007a)**. [TV nutritional promotion in New Zealand \(February-March\)](#). The Balanced Nutrition Index (BNI) (ISSN:1177-8849), 2007, issue 1.
2. **PÉREZGONZÁLEZ Jose D (2007b)**. [Nutritional balance of snack bars in New Zealand](#). The Balanced Nutrition Index (BNI) (ISSN:1177-8849), 2007, issue 2.
3. **PÉREZGONZÁLEZ Jose (2008a)**. *To eat or not to eat Tick-approved foods*. The Nutrition Society of New Zealand's Annual Conference, 9th-10th December, Christchurch, New Zealand, page 17.
4. **PÉREZGONZÁLEZ Jose D (2008b)**. [Traditional Apache foods](#). The Balanced Nutrition Index (BNI) (ISSN:1177-8849), 2008, issue 1.
5. **PEREZGONZALEZ Jose D (2011a)**. [Balanced nutrition](#). Journal of Knowledge Advancement & Integration (ISSN 1177-4576), 2011, pages 9-11.
6. **PÉREZGONZÁLEZ Jose D (2011b)**. [Chocolate bars nutritional balance: 2007-2011](#). The Balanced Nutrition Index (BNI) (ISSN:1177-8849), 2011.

+++ **Footnotes** +++

7. The **Balanced Nutrition Index™** is a trademarked name, and it refers to the technology itself, a [database](#) and a [journal](#).
8. The BNI™ is not necessarily a good indicator of nutritional quality, although it seems to correlate well with it. For example, a food with an excess of one gram of saturated fat and another with a deficiency of one gram of carbohydrate will appear as having the same degree of unbalance. However, excess of saturated fat is normally less healthy than deficiency in carbohydrate. It is worth remembering that the BNI™ is not a health index and, thus, do not compensate the weight of certain nutrients according to health values.

Want to know more?

[Balanced nutrition](#)

This Wiki of Science page deals with the meaning of balanced nutrition and how to differentiate it from related concepts, such as a balanced diet, a varied diet and a healthy diet.

The Balanced Nutrition Index™

You can find further information related to the index in the [Balanced Nutrition Index™ database](#) or the [Balanced Nutrition Index™ journal](#).

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page revision: 3, last edited: 25 May 2011, 16:20 GMT+12 (41 seconds ago)

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