

# Nutritional balance of no-added-sugar chocolates - 2011

[<Normal page] [**PEREZGONZALEZ Jose D (2011)**. *Nutritional balance of no-added-sugar chocolates*. Journal of Knowledge Advancement & Integration (ISSN 1177-4576), 2011, pages 43-45.]

## Nutritional balance of no-added-sugar chocolates

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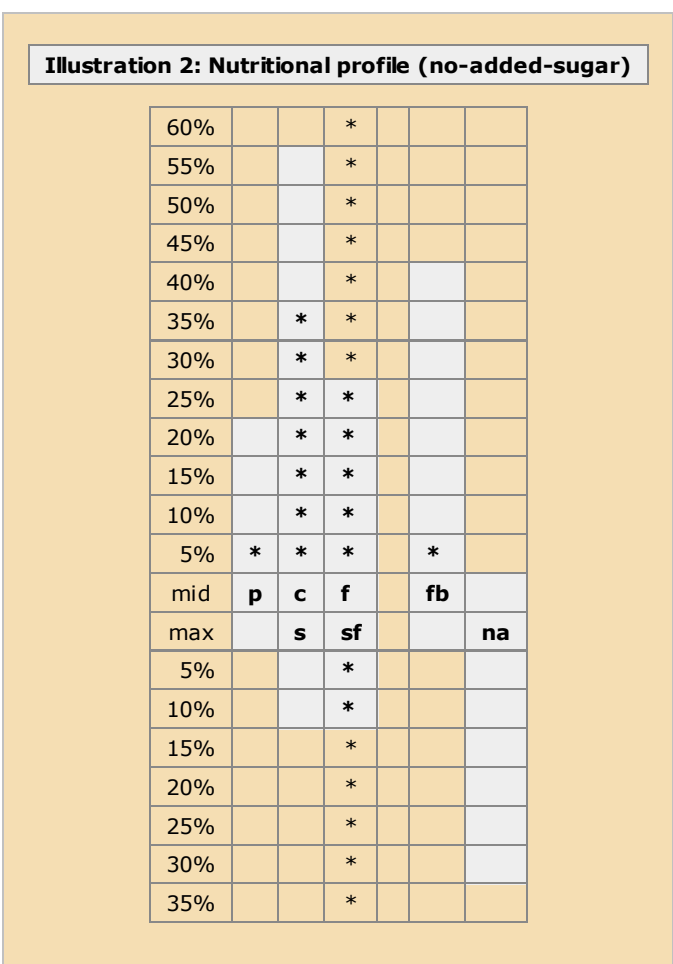
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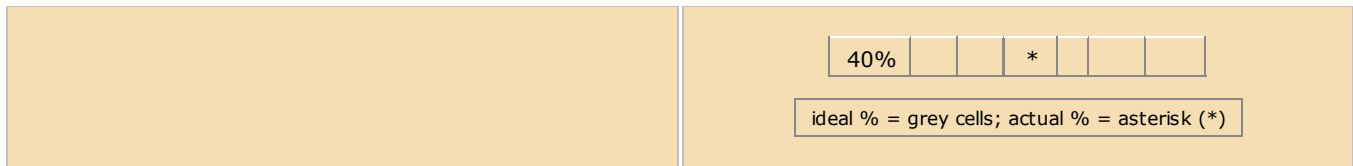
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The nutritional balance of sugar-free chocolates was studied by Pérezgonzález in 2011<sup>1</sup>. He found that a sample of chocolate bars, chocolate blocks and bonbons currently available in New Zealand shared a similar nutritional profile characterized as being low in protein, high in fat, high in saturated fat, low in fiber and low in sodium (*Pérezgonzález, 2011b*<sup>2</sup>). Sugar-free chocolates, however, differed from other chocolates in also being adequate (or low) in sugar and, consequently, low in carbohydrate<sup>4</sup> (see profile in Illustration 2).

On average, no-added-sugar chocolates have a nutritional balance of BNI 82.73f, being particularly unbalanced towards excess of fat.

<b>Illustration 1: Nutrition information (no-added-sugar chocolates)</b>		
<b>BNI</b>	<b>82.73f</b>	<b>0.00</b>
<b>Food, 100g</b>	<b>2011</b>	<b>Ideal</b>
<b>Protein</b>	5.9	27.9
<b>Carbohydrate</b>	51.1	76.6
<b>Sugars</b>	3.3	< 13.9
<b>Fat</b>	36.6	15.5
<b>Saturated fat</b>	23.8	< 6.2
<b>Fiber</b>	1.0	8.4
<b>Sodium</b>	0.028	< 0.557
<b>Kcal</b>	557.4	557.4
<b>kJul</b>	2332.2	2332.2





## International standards

No-added-sugar chocolates show small changes in their indexing across different international [Recommended Dietary Intakes \(RDIs\)](#) (see illustration 3). Overall, however, all nutritional indexes are high and relatively similar to each other, which indicates that the nutritional composition of no-added-sugar chocolates would be deemed highly unbalanced in different countries. Notwithstanding this, such nutritional unbalance is sensibly smaller than that of [typical chocolates](#) and [sugary chocolates](#).

<b>Illustration 3: Nutritional balance across different RDIs (no-added-sugar chocolates)</b>						
<b>No-sugar-added chocolates</b>	<b>average</b>	<b>82.73</b>	<b>82.73</b>	<b>81.39</b>	<b>81.39</b>	<b>79.39</b>
<b>Product100g</b>	<b>Company</b>	<b>BNI</b>	<b>WHO</b>	<b>US/CAN</b>	<b>AUS/NZ</b>	<b>UK</b>
<b>Guylian No Sugar Added milk</b>	Guylian	79.46	79.46	74.86	74.86	72.86
<b>Guylian No Sugar Added dark</b>	Guylian	85.68	85.68	80.21	80.21	78.21
<b>Richfields No Added Sugar classic dark</b>	Richfields	89.25	89.25	89.25	89.25	87.25

Correlations between indexes are also very high (although, given that there are only 3 chocolates in this subsample, only perfect correlations were statistically significant). Nonetheless, the pattern of correlations suggests that the nutritional balance reported by the BNI™ index matches that of other nutritional standards. (Said otherwise, that no-sugar-added chocolates tend to form a similar hierarchy when indexed using different international standards).

<b>Illustration 4: Correlations between RDIs</b>				
	<b>BNI</b>	<b>WHO</b>	<b>US/CAN</b>	<b>AUS/NZ</b>
<b>WHO</b>	1.000			
(sig.)	.000			
<b>US/CAN</b>	.955	.955		
(sig.)	.192	.192		
<b>AUS/NZ</b>	.955	.955	1.000	
(sig.)	.192	.192	.000	
<b>UK</b>	.955	.955	1.000	1.000
(sig.)	.192	.192	.000	.000

## Methods

### Sample

- The initial sample comprised 50 chocolate bars, chocolate blocks and bonbons normally sold around New Zealand (yet most chocolates were manufactured in Australia and, thus, can be assumed they were equally available there, while some were imported from other

international locations). The sample almost represented the entire population of chocolates sold at supermarkets in 2011. Yet, for practical reasons, it should be considered as a convenient sample in its collation.

- 3 chocolates shared a particular nutritional profile and, thus, conformed the 'No-added-sugar subsample' whose results are described here.

## Materials & analysis

- Nutrition information for each chocolate was retrieved from the nutritional information panel on each item and was analyzed using the [Balance Nutrition Index™ \(BNI™\)](#) technology (see [Pérezgonzález, 2011c<sup>3</sup>](#)).
- SPSS-v16 was used for statistical analysis, which included descriptives and correlations.

## References

1. **PEREZGONZALEZ Jose D (2011a)**. [Sweet chocolate](#). The Balanced Nutrition Index ([ISSN 1177-8849](#)), 2011, issue 2.
2. **PEREZGONZALEZ Jose D (2011b)**. [Nutritional balance of typical chocolates](#). Journal of Knowledge Advancement & Integration ([ISSN 1177-4576](#)), 2011, pages 35-38. Also retrievable from [Wiki of Science](#).
3. **PEREZGONZALEZ Jose D (2011c)**. [Balanced Nutrition Index™ \(BNI™\)](#). Journal of Knowledge Advancement & Integration ([ISSN 1177-4576](#)), 2011, pages 20-21. Also retrievable from [Wiki of Science](#).

+++ **Footnotes** +++

4. Sugar was substituted with maltitol, whose energy counts as carbohydrate.
5. There were five categories, but two of them had only one item each. The remaining three categories were: [No-added-sugar chocolates](#) (3 items), [Typical chocolates](#) (38 items), and [Sugary chocolates](#) (7 items).
6. Most chocolate products did not 'report' their fiber content, thus they were treated as providing no fiber.

## Want to know more?

### [BNI™ database](#)

The database offers individual nutrition analysis for foods, including the chocolates in this sample as well as the average 'chocolate bars & bonbons' described in above article.

### [BNI™ journal - 2011, issue 2](#)

This issue of the Balanced Nutrition Index™ journal collates all BNI™ nutrition information for the overall the sample as well as average information in a single book.

### [Wiki of Science - Balance Nutrition Index™ \(BNI™\)](#)

This Wiki of Science page offers more information about the BNI™ technology.

### [Wiki of Science - Nutritional balance of chocolates](#)

These Wiki of Science pages offer more information about other categories of chocolate: [Typical chocolates](#), and [Sugary chocolates](#).

## Author

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[The Balanced Nutrition Index](#)