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Nutritional balance of sugary chocolates - 2011

[<Normal page] [**PEREZGONZALEZ Jose D (2011)**. *Nutritional balance of sugary chocolates*. Journal of Knowledge Advancement & Integration (ISSN 1177-4576), 2011, pages 39-42.]

Nutritional balance of sugary chocolates

The nutritional balance of sugary chocolates was studied by Pérezgonzález in 2011¹. 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*²). Chocolates with extra source of sugars (eg, added caramel) differed from other chocolates in also being high in sugars and high in carbohydrate (see profile in illustration 2).

On average, sugary chocolates have a nutritional balance of BNI 128.26s, being particularly unbalanced towards excess of sugars.

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Illustration 1: Nutrition information (sugary chocolates)

	2011	Ideal
BNI	128.26s	0.00
Food, 100g	2011	Ideal
Protein	3.9	23.2
Carbohydrate	69.5	63.9
Sugars	57.0	< 11.6
Fat	19.0	12.9
Saturated fat	12.1	< 5.2
Fiber	0.0	7.0
Sodium	0.103	< 0.465
Kcal	464.6	464.6
kJul	1943.9	1943.9

Illustration 2: Nutritional profile (sugary)

60%	*				
55%	*				
50%	*				
45%	*				
40%	*				
35%	*	*			
30%	*	*			
25%	*	*			
20%	*	*			
15%	*	*			
10%	*	*			
5%	*	*	*		
mid	p	c	f	fb	
max		s	sf		na
5%		*	*		*
10%		*	*		
15%		*	*		
20%		*	*		
25%		*	*		
30%		*			
35%		*			
40%		*			
45%		*			
50%		*			

ideal % = grey cells; actual % = asterisk (*)

International standards

Sugary chocolates show small changes in their indexing across different international [Recommended Dietary Intakes \(RDIs\)](#), with the US/CAN index showing the largest discrepancies, namely because US/CAN standards allow for more sugars to be consumed (see illustration 3). Overall, however, all nutritional indexes are high and relatively similar to each other, which indicates that the nutritional composition of sugary chocolates would be deemed highly unbalanced in different countries.

Illustration 3: Nutritional balance across different RDIs (sugary chocolates)						
Sugary chocolates	average	128.26	128.26	98.26	128.26	124.26
Product100g	Company	BNI	WHO	US/CAN	AUS/NZ	UK
Perky Nana mighty	Cadbury	102.96	102.96	72.96	102.96	98.96
Mars	Mars	124.31	124.31	94.31	124.31	120.31
Mars caramel	Mars	124.85	124.85	94.85	124.85	120.85
Crunchie	Cadbury	132.34	132.34	102.34	132.34	128.34
Whittaker's rum & raisins	Whittaker's	132.64	132.64	102.64	132.64	128.64
Pixie caramel	Nestle	139.13	139.13	109.13	139.13	135.13
M&M's milk chocolate	Mars	140.53	140.53	110.53	140.53	136.53

Correlations between indexes are also perfect and statistically significant. This suggests that the nutritional balance reported by the BNI™ index matches that of other nutritional standards. (Said otherwise, that sugary chocolates and bonbons tend to form a similar hierarchy when indexed using different international standards).

Illustration 4: Correlations between RDIs				
	BNI	WHO	US/CAN	AUS/NZ
WHO	1.000			
(sig.)	.000			
US/CAN	1.000	1.000		
(sig.)	.000	.000		
AUS/NZ	1.000	1.000	1.000	
(sig.)	.000	.000	.000	
UK	1.000	1.000	1.000	1.000
(sig.)	.000	.000	.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.
- 7 chocolates shared a particular nutritional profile and, thus, conformed the 'Sugary chocolate 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, 2011c³](#)).
- 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. 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).
5. 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 [No-added-sugar chocolates](#).

Author

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