

Site: **Wiki of Science** at <http://wikiofscience.wikidot.com>
 Source page: **Nutritional balance of typical chocolates - 2011** at
<http://wikiofscience.wikidot.com/print:nutritional-balance-typical-chocolates>

Nutritional balance of typical chocolates - 2011

[<Normal page] [**PEREZGONZALEZ Jose D (2011)**. *Nutritional balance of typical chocolates*. Journal of Knowledge Advancement & Integration (ISSN 1177-4576), 2011, pages 35-38.]

Nutritional balance of typical chocolates

The nutritional balance of typical chocolates was studied by Pérezgonzález in 2011¹. A sample of chocolate bars, chocolate blocks and bonbons currently available in New Zealand shared a similar nutritional profile yet differed enough as to being able to be separated into particular categories. The most populated categories³ shared a nutritional profile characterized as being low in protein, high in fat, high in saturated fat, low in fiber⁴ and low in sodium. Typical chocolates, the most frequent category, differed from the others in also being high in sugar but low in total carbohydrate (see profile in illustration 2).

On average, the typical chocolate has a nutritional balance of BNI 126.94-fb, being particularly unbalanced towards deficiency in fiber⁴.

[Fold](#)

Table of Contents

[Nutritional balance of typical chocolates](#)
[International standards](#)
[Methods](#)
[Sample](#)
[Materials & analysis](#)

Illustration 1: Nutrition information (typical chocolates)

BNI	126.94-fb	0.00
Food, 100g	2011	Ideal
Protein	7.2	26.6
Carbohydrate	53.1	73.3
Sugars	47.4	< 13.3
Fat	32.4	14.8
Saturated fat	17.8	< 5.9
Fiber	0.1	8.0
Sodium	0.091	< 0.533
Kcal	532.8	532.8
kJul	2229.2	2229.2

Illustration 2: Nutritional profile (typical)

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%		*				

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

International standards

Typical chocolates show small changes in their indexing across different international [Recommended Dietary Intakes \(RDIs\)](#), with 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, indicating that the nutritional composition of typical chocolates would be deemed highly unbalanced by several countries.

Illustration 3: Nutritional balance across different RDIs (typical chocolates)						
Typical chocolates	average	126.94	126.94	87.61	117.61	114.94
Product100g	Company	BNI	WHO	US/CAN	AUS/NZ	UK
Milo	Nestle	109.93	109.93	79.93	109.93	105.93
Twix	Twix	112.30	112.30	82.30	112.30	108.30
Picnic	Cadbury	115.94	115.94	75.94	105.94	103.94
Snickers	Snickers	116.58	116.58	76.58	106.58	104.58
The Original Peanut Slab	Whittaker's	116.68	116.68	76.68	106.68	104.68
Picnic fruit & nut	Cadbury	119.52	119.52	81.32	111.32	107.52
Dark cooking chocolate	Home Brand	121.93	121.93	81.93	111.93	109.93
Guylian Dark 72%	Guylian	122.51	122.51	94.73	112.51	110.51
Maltesers	Mars	123.59	123.59	93.59	123.59	119.59
Scarborough Fair decadence	Scarborough Fair	123.60	123.60	88.96	113.60	111.60
Scarborough Fair enigma	Scarborough Fair	123.60	123.60	88.96	113.60	111.60
Scarborough Fair sinless	Scarborough Fair	123.60	123.60	88.96	113.60	111.60
Scarborough Fair sublime	Scarborough Fair	123.60	123.60	88.96	113.60	111.60
Old Gold 70% cocoa	Cadbury	123.68	123.68	92.83	113.68	111.68
M&M's peanut	Mars	124.29	124.29	84.29	114.29	112.29
Time Out	Cadbury	126.53	126.53	93.07	123.07	119.07
KitKat	Nestle	128.16	128.16	98.16	128.16	124.16
Moro Gold	Cadbury	129.76	129.76	99.76	129.76	125.76
Dairy Milk caramello	Cadbury	130.04	130.04	100.04	130.04	126.04
Dairy Milk fruit & nut	Cadbury	130.13	130.13	93.51	123.51	119.51
Dairy Milk roast almond	Cadbury	130.54	130.54	90.54	120.54	118.54
Ferrero Rocher	Ferrero Rocher	131.91	131.91	91.91	121.91	119.91
Guylian milk with hazelnuts	Guylian	131.93	131.93	91.93	121.93	119.93

Excellence blueberry intense	Lindt & Sprungli	132.43	132.43	92.43	122.43	120.43
Excellence chilli	Lindt & Sprungli	132.62	132.62	99.90	129.90	125.90
Twirl	Cadbury	133.43	133.43	103.43	133.43	129.43
Dairy Milk	Cadbury	133.51	133.51	103.51	133.51	129.51
Flake luxury	Cadbury	134.07	134.07	104.07	134.07	130.07
Flake	Cadbury	134.42	134.42	104.42	134.42	130.42
Dairy Milk duo	Cadbury	134.58	134.58	104.58	134.58	130.58
Aero	Nestle	134.79	134.79	104.79	134.79	130.79
Excellence ginger	Lindt & Sprungli	135.95	135.95	99.89	129.89	125.89
Excellence sea salt	Lindt & Sprungli	135.95	135.95	99.89	129.89	125.89
Bounty	Mars	136.30	136.30	106.30	136.30	132.30
Milkybar	Nestle	137.11	137.11	107.06	137.06	133.06
Lindt pistache	Lindt & Sprungli	137.95	137.95	97.95	127.95	125.95
Guylian white with hazelnuts	Guylian	138.64	138.64	98.64	128.64	126.64
Skor	Hershey's	140.06	140.06	107.15	137.15	133.15

Correlations between indexes are also very high and significantly so. This suggests that the nutritional balance reported by the BNI™ index matches that of other nutritional standards. (Said otherwise, that typical 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	.882	.882		
(sig.)	.000	.000		
AUS/NZ	.892	.892	.959	
(sig.)	.000	.000	.000	
UK	.920	.920	.962	.997
(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.

- 38 chocolates shared a particular nutritional profile and, thus, conformed the 'Typical chocolates 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, 2011b²](#)).
- 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)**. [Balanced Nutrition Index™ \(BNI™\)](#). Journal of Knowledge Advancement & Integration ([ISSN 1177-4576](#)), 2011, pages 20-21. Also retrievable from [Wiki of Science](#).

+++ **Footnotes** +++

3. 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).

4. 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:

[No-added-sugar chocolates](#) and [Sugary chocolates](#).

Author

Jose D PEREZGONZALEZ (2011). Massey University, Turitea Campus, Private Bag 11-222, Palmerston North 4442, New Zealand. ([_JDPerezgonzalez](#) [JDPerezgonzalez](#)).

Other interesting sites



[Journal KAI](#)



[Wiki of Science](#)



[AviationKnowledge](#)



[A4art](#)



[The Balanced Nutrition Index](#)

page revision: 13, last edited: 9 Jun 2011, 10:55 GMT+12 (10 seconds ago)

Unless stated otherwise Content of this page is licensed under [Creative Commons Attribution-ShareAlike 3.0 License](#)