

20110805 - Nutritional balance of skimmed milk - 2008

[<Normal page] [**PEREZGONZALEZ Jose D (2008)**. *Nutritional balance of skimmed milk*. Journal of Knowledge Advancement & Integration (ISSN 1177-4576), 2011, pages 73-76.]

Nutritional balance of skimmed milk

This article offers descriptive data regarding the nutritional balance of skimmed milk. These data were collected for a research on milk and milk alternatives in New Zealand between 2007 and 2008 (*Perezgonzalez, 2008¹*).

Skimmed milk (including skim, low-fat, and trim milk, as well as fat-free, and super-trim milk) is that containing very little fat (around 0.2%). This article, however, analyzes the nutritional balance of skimmed milk beyond its fat content. Indeed, the average skimmed milk (in this sample) is adequate in low in fat and saturated fat, high in protein, adequate in carbohydrate but high in sugar⁴, low in fiber, and high in sodium (for its energetic content).

On average, skimmed milk has a nutritional balance of BNI 123.16s, being particularly unbalanced towards excess of sugar.

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Illustration 1: Nutrition information (skimmed milk)

BNI	123.16s	0.00
Food, 100ml	2008	Ideal
Protein	4.2	2.0
Carbohydrate	5.2	5.4
Sugar	5.2	< 1.0 ⁴
Fat	0.2	1.1
Saturated fat	0.1	< 0.4
Fiber	0.0	0.6
Sodium	0.046	< 0.039
Kcal	39.4	39.4
kJul	164.8	164.8

Illustration 2: Nutritional profile (skimmed milk)

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

Skimmed milk appears as relatively unbalanced according to international [Recommended Dietary Intakes \(RDIs\)](#), although less so according to U.S. and Canada's standards, which allow for a higher content of sugars.

Illustration 3: Nutritional balance across different RDIs (skimmed milk)						
Skimmed milk	average	123.16	143.16	72.86	122.86	100.86
Product 100ml	Company	BNI	WHO	US/CAN	AUS/NZ	UK
Meadow Fresh trim (North Island)	Goodman Fielder	109.58	129.58	59.31	109.31	87.31
Home Brand trim milk	Progressive	117.62	137.62	67.27	117.27	95.27
Anchor Xtra calcium boost	Fonterra	124.03	144.03	73.97	123.97	101.97
Anchor Super Trim	Fonterra	126.91	146.91	76.62	126.62	104.62
WeightWatchers skim milk	WeightWatchers	126.97	146.97	76.68	126.68	104.68
Farmgate Dairy extra slim	United Milk	127.16	147.16	76.88	126.88	104.88
Basics skim milk powder	Basics	127.42	147.42	77.11	127.11	105.11
Meadow Fresh Calci Trim high-calcium	Goodman Fielder	129.10	149.10	78.70	128.70	106.70
Pams skim milk powder	Pams	131.76	151.76	81.76	131.76	109.76

(Source: Perezgonzalez, 2008¹)

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

Correlations between indexes are high and positive (and significant at the 0.10 cut-off point, which seems appropriate given the small sample size). These correlations indicate that the skimmed milk products being compared tend to form a similar hierarchy when indexed using different international standards.

Methods

Research approach

- The original research was an exploratory study on the nutritional balance of milk and milk alternatives in New Zealand in 2007-2008.

Sample

- The initial research sample included 44 milk and alternative milk products (ie, milk, soymilk and rice milk)¹. The food products were collected in a convenient manner, looking more for a variety of brands than a random sampling of the same.
- The results in this study simply describe the 'subsample' of skimmed milk products within the original sample: ie, 9 brands of skimmed milk³.

Materials & analysis

- Milk products were purchased from local supermarket chains in Palmerston North, New Zealand.
- Nutrition information for each milk product was retrieved from the nutritional information panel on each item, to be assessed using the [Balanced Nutrition Index™ \(BNI™\)](#) technology (see [Perezgonzalez, 2011²](#)).
- SPSS-v16 was used for variable computations, including BNI and international indexes, and statistical analysis, which included descriptives and correlations.

Generalization potential

Some of the products may be traded with Australia and internationally, especially UHT milk and milk solids. Thus, the results of this study may be generalizable to the following populations (in order of decreasing generalization power):

- Australia and other international exporting destinations trading New Zealand milk.
- Internationally, if one assumes milk to be of approximately similar nutritional composition anywhere.

References

1. **PEREZGONZALEZ Jose D (2008)**. [Milk and milk alternatives in New Zealand in 2007-2008](#). The Balanced Nutrition Index ([ISSN 1177-8849](#)), 2011, issue 3.
2. **PEREZGONZALEZ Jose D (2011)**. [Balanced Nutrition Index™ \(BNI™\)](#). Journal of Knowledge Advancement & Integration ([ISSN 1177-4576](#)), 2011, pages 20-21. Also retrievable from [Wiki of Science](#).

+++ **Footnotes** +++

3. The other categories were: [standard milk](#) (10 items), [semi-skimmed milk](#) (7 items), [standard soymilk](#) (4 items), [low-fat soymilk](#) (7 items), [flavored low-fat soymilk](#) (2 items), and [rice milk](#) (5 items).

4. National food agencies usually recommend ignoring non-added-sugars (other than honey, syrups and fruit juices) in order to promote the consumption of milk and fresh fruit. Therefore, this contribution as well as overall balanced nutrition index values would appear as overestimated under such practice. Indeed, when lactose is not counted as sugar, then skimmed milk's nutritional balance would be BNI 37.58p (particularly unbalanced towards excess of protein).

Want to know more?

[BNI™ database](#)

The database offers individual nutrition analyses for foods, including the milk and alternative milk products referred to in above article.

[BNI™ journal \(2011, issue 3\) - Milk and milk alternatives in New Zealand in 2007-2008](#)

This issue of the Balanced Nutrition Index™ journal collates all BNI™ nutrition information for the original sample 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 milk and milk alternatives

These Wiki of Science pages offer more information for other milk categories: [standard milk](#), [semi-skimmed milk](#), [standard soymilk](#), [low-fat soymilk](#), [flavored low-fat soymilk](#), and [rice milk](#).

Author

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