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20110804 - Nutritional balance of semi-skimmed milk - 2008

[<Normal page] [**PEREZGONZALEZ Jose D (2008).** *Nutritional balance of semi-skimmed milk.* Journal of Knowledge Advancement & Integration (ISSN 1177-4576), 2011, pages 69-72.]

Nutritional balance of semi-skimmed milk

This article offers descriptive data regarding the nutritional balance of semi-skimmed milk. These data were collected for a research on milk and milk alternatives in New Zealand between 2007 and 2008 *(Perezgonzalez, 2008[1])*.

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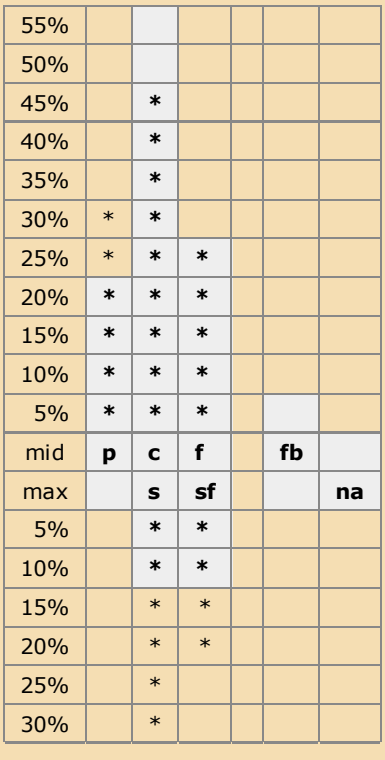
Semi-skimmed (semi-skim, light, lite, or reduced fat) milk is defined as that containing about 1.7% fat. This article, however, analyzes the nutritional balance of semi-skimmed milk beyond its fat content. Indeed, the average semi-skimmed milk (in this sample) is adequate in fat but high in saturated fat, high in protein, low in carbohydrate but high in sugar[4], low in fiber, and within maximum recommended limits for sodium.

On average, semi-skimmed milk has a nutritional balance of BNI 96.37s, being particularly unbalanced towards excess of sugar.

Illustration 1: Nutrition information (semi-skimmed milk)

BNI	**96.37s**	**0.00**
Food, 100ml	**2008**	**Ideal**
Protein	3.5	2.3
Carbohydrate	4.9	6.2
Sugar	4.9	< 1.1[4]
Fat	1.3	1.3
Saturated fat	0.9	< 0.5
Fiber	0.0	0.7
Sodium	0.043	< 0.045
Kcal	45.3	45.3
kJul	189.5	189.5

Illustration 2: Nutritional profile (semi-skimmed milk)



35%		*				
40%		*				
45%		*				

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

International standards

Semi-skimmed milk appears as highly 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 (semi-skimmed milk)						
Semi-skimmed milk	**average**	**96.37**	**116.37**	**54.56**	**96.37**	**80.56**
Product 100ml	**Company**	**BNI**	**WHO**	**US/CAN**	**AUS/NZ**	**UK**
Meadow Fresh Balance lite	Goodman Fielder	89.64	109.64	47.32	89.64	73.32
Farmgate Dairy slim	United Milk	93.78	113.78	54.15	93.78	80.15
Anlene low fat	Fonterra	94.81	114.81	47.79	94.79	73.79
Anchor Vital omega-3	Fonterra	95.19	115.19	48.70	95.05	74.70
Anchor Lite	Fonterra	96.80	116.80	58.02	96.76	84.02
Home Brand lite milk	Progressive	98.20	118.20	59.35	98.20	85.35
Liddells lactose free (low fat)	Liddells	99.03	119.03	55.26	99.03	81.26
(Source: Perezgonzalez, 2008[1])						

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 semi-skimmed milk products being compared 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	.720	.720		
(sig.)	.068	.068		
AUS/NZ	1.000	1.000	.726	
(sig.)	.000	.000	.065	
UK	.720	.720	1.000	.726
(sig.)	.068	.068	.000	.065

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 semi-skimmed milk products within the original sample: ie, 7 brands of semi-skimmed milk[3].

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, 2011[2])*.
- 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), skimmed milk (9 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 semi-skimmed milk's nutritional balance would be BNI 29.84sf (particularly unbalanced towards excess of saturated fat).

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, skimmed milk, standard soymilk, low-fat soymilk, flavored low-fat soymilk, and rice milk.

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