

20130115 - Nutritional balance of corn crisps (descriptive statistics) - 2012

[Data] [[<Normal page](#)] [**PEREZGONZALEZ Jose D (2012)**. *Nutritional balance of corn crisps (descriptive statistics)*. Knowledge ([ISSN 2324-1624](#)), 2013, pages 1-4.]

Corn crisps' BNI (description)

Perezgonzalez assessed the nutritional balance of corn crisps³ in 2012², as part of a research on the nutritional composition of snacks in New Zealand. This article provides descriptive information both about the sample of products under research ([foodBNI](#)) as well as about a hypothetical diet based on those products ([dietBNI](#)).

foodBNI

The distribution of nutritional balance, as shown in illustration 1, covered a wide range of values, possibly exacerbated by the small number of products under research. The median was located at BNI 76.98 and the middle 68% of products ranged between BNI 42 (P₁₆) and BNI 121 (P₈₄). There was a slight positive skewness (mean=78.49, zSkew=0.99), although, given the shape of the distribution, this may be of little practical importance.

The distribution of nutritional balance varied slightly according to the particular [recommended dietary intakes \(RDIs\)](#) of reference, although all followed a pattern similar to the one just described. Even so, this group of products appeared slightly less unbalanced under US's, Australia's and UK's RDIs than under WHO's RDIs.

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Illustration 1: Food's nutritional balance distribution					
		International RDIs			
Scale	BNI	WHO	US/CAN	AUS/NZ	UK
= 0					
≥ 0					
≥ 10			1		
≥ 20		2	1	1	1
≥ 30	2	2	3	1	2
≥ 40	2	1		3	2
≥ 50	1		1	1	1
≥ 60			4	3	4
≥ 70	4	4	1	2	1
≥ 80	2	2	2	2	2
≥ 90					
≥ 100	2	2			

≥110					
≥120			2	2	2
≥130					
≥140	2	2			
≥150					
≥160					
≥170					
≥180					
≥190					
≥200					
Median	76.98	76.98	65.53	65.53	64.87
SPR	39.45	44.85	37.92	32.97	32.62
P₁₆	41.74	30.94	27.33	37.23	37.92
P₈₄	120.63	120.63	103.16	103.16	103.16
RSkew	4.21	-1.20	-0.28	4.66	5.67
Mean	78.49	74.89	63.44	67.00	66.70
StDev	34.20	38.29	32.37	28.64	28.31
zSkew	0.99	0.56	0.67	1.13	1.33
zKurt	-0.17	-0.52	-0.39	-0.03	0.02
Unstandardised	small	medium	large	(Avg.StDev)	
effect size⁴	6	16	26	(32)	

Correlations between indexes were high, thus supporting the idea of a common pattern in the distribution of nutritional balance across international indexes for this particular group of products.

Illustration 2: Correlations (Pearson and Spearman)					
r / rho	BNI	WHO	US/CAN	AUS/NZ	UK
BNI		.996	1.000	1.000	.986
WHO	.996		.996	.996	.989
US/CAN	.998	.997		1.000	.986
AUS/NZ	.997	.989	.995		.986
UK	.996	.989	.992	.996	

dietBNI

As part of a hypothetical diet where all products contributed the same weight of crisps, the resulting nutritional unbalance would decrease slightly. Such diet would "benefit" more under Australia's and UK's RDIs (15 and 19 units on the scale, respectively) than under the other RDIs (around 11 units on the scale).

Illustration 2: Diet's nutritional balance						
Protein	Carbs	Sugar	Fat	Sat.fat	Fiber	Sodium
6.3	61.7	5.2	25.2	11.0	1.9	0.855
International RDIs	BNI	WHO	US/CAN	AUS/NZ	UK	
(diet)	67.36	66.10	52.09	52.36	47.57	
<i>(Values per 100g)</i>						

Methods

Research approach

Exploratory study for mapping the nutritional balance of corn crisps³ in New Zealand.

Sample

A sample of 15 corn crisp products², including diverse brands and flavors, and other relevant categories. Notwithstanding this, the actual products were collected in a convenient manner from four major national supermarket chains. The final sample covered most of the population of corn crisp products available at those supermarkets.

Variables

Variables of interest for this research were the following:

- Weight contribution of seven nutrients (protein, carbohydrate, sugar, fat, saturated fat, fiber and sodium) to 100g of a food product.
- The Balanced Nutrition Index (BNI) of each food product, as calculated from above variables.
- Aggregated information for the sample of products (foodBNI).
- Aggregated information about the individual nutrients for the simulation of hypothetical diets (dietBNI).

Materials & analysis

Relevant data were collated after purchasing the food products or by capturing such information from producers' websites if this information was available and was deemed reliable. The data were then assessed using the [Balanced Nutrition Index™ \(BNI™\)](#) technology (see [Perezgonzalez, 2011¹](#)).

SPSS-v18 was used for the computation of variables, including BNI and international indexes, and for descriptive statistical analyses.

Generalization potential

Although the research sample captured a large proportion of the corn crisp products available at the time, the resulting sample is still too small as for inferring anything beyond the group of products here described. It is recommended to collate the data from this group with that of related groups of products if inferential analyses are intended.

References

1. **PEREZGONZALEZ Jose D (2011)**. [Balanced Nutrition Index™ \(BNI™\)](#). Journal of Knowledge Advancement & Integration ([ISSN 1177-4576](#)), 2011, pages 20-21.
2. **PEREZGONZALEZ Jose D (2012)**. [Crispy crisps](#). The Balanced Nutrition Index ([ISSN 1177-8849](#)), 2012, issue 7.

+++ **Notes** +++

- 3. Snacks made from extruded corn (thus, not including [corn chips](#)).
- 4. This is the estimated unstandardized effect size for group differences (Cohen's d and Glass's Δ) given an average standard deviation and following Cohen's d effect size interpretation. It can be used to ascertain the relative importance of descriptive data without the need to perform inferential tests.

Want to know more?

BNI analysis of individual corn crisp products

You can access either the [BNI™ database](#) or the '[BNI™ journal \(2012, issue 7\) - Crispy crisps](#)' for individual nutrition analyses of each food product in the sample.

[Wiki of Science - Nutritional balance of corn crisps \(introduction\)](#)

This Wiki of Science page provides a descriptive summary of the nutritional balance of corn crisps.

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

This Wiki of Science page collates information about several foods on a single page and provides useful links to the appropriate files.

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