20110906 - Nutritional balance of cured meats (v.2)

Balance of cured meats

Perezgonzalez studied the nutritional balance of cured meats in 2011[1]. He found that sandwich-ready cured meats in New Zealand tend to be highly unbalanced, with average BNI values of around 145.09 (foodBNI[5]). When cured meats are considered as part of a diet (ie, all cured meats are consumed approximately in the same proportion over time), an analysis of average nutrient composition for the aggregated sample becomes relevant and informative. Cured meats thus show an average nutritional balance of BNI 140.91na (dietBNI[6]), being particularly unbalanced towards excess of sodium. Being an animal-derived product, they are also high in protein, fat and saturated fat, and low in carbohydrate, sugar and fiber (see illustration 2).

Illustration 1: Nutrition information (dietBNI)

foodBNI (mean)[5]	**145.09**	**0.00**
dietBNI[6]	**140.91na**	**0.00**
Cured meats (100g)	**2011**	**Ideal**
Protein	18.0	8.5
Carbohydrate	3.1	23.5
Sugar	0.9	< 4.3
Fat	9.6	4.7
Saturated fat	4.1	< 1.9
Fiber	0.0	2.6
Sodium	1.309	< 0.171
Kcal	170.8	170.8
kJul	714.6	714.6

Illustration 2: Nutritional profile (dietBNI)

%					
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%					*
55%					*
60%					*
65%					*

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

International standards

Cured meats are highly unbalanced according to international [Recommended Dietary Intakes (RDIs)](), although a bit less so according to the U.S.'s, Canadas's and the U.K.'s standards.

Illustration 3: Nutritional balance across different RDIs (cured meats)						
Cured meats (mean)	foodBNI[5]	145.09	164.00	117.24	132.69	116.71
Cured meats (average)	dietBNI[6]	140.91	160.91	102.39	122.39	102.39
Product100g	Company	BNI	WHO	US/CAN	AUS/NZ	UK
Value shaved ham	Countdown	94.22	114.22	65.75	85.75	64.82
Value ham & chicken luncheon	Countdown	107.06	127.06	89.26	90.79	89.26
Hellers manuka smoked ham	Hellers	117.66	137.66	90.29	110.29	90.29
Value shaved Polish sausage	Countdown	123.17	143.17	90.43	107.10	90.43
Kiwi shaved pastrami	Goodman Fielder	127.98	147.98	102.11	122.11	100.11
Hellers roast chicken	Hellers	128.05	148.05	100.65	120.65	98.65
Value shaved roast chicken	Countdown	129.11	149.11	101.71	121.71	99.71
Countdown shaved champagne ham	Countdown	130.55	150.55	103.12	123.12	102.93
Hellers 97% fat free shaved ham	Hellers	130.55	150.55	103.12	123.12	102.93
Countdown shaved corned silverside	Countdown	131.77	151.77	104.34	124.34	104.34
Value shaved roast beef	Countdown	132.83	152.83	109.31	129.31	109.31
Pams reduced fat Italian salami	Pams	139.87	159.87	102.94	122.63	102.94
Hellers cooked silverside	Hellers	141.40	161.40	113.97	133.97	112.21
Pams snyworst salami	Pams	146.37	161.32	129.28	129.28	129.28
Value shaved pastrami	Countdown	161.55	181.55	131.01	151.01	131.01
Beehive champagne ham tasty honey cured	Premier Beehive	175.27	195.27	145.49	165.49	145.49
Verkerks Dutch salami	Verkerks	176.42	187.47	155.74	155.74	155.74
Verkerks Italian salami	Verkerks	181.37	192.55	160.03	160.03	160.03
Italian salami	Progressive	182.04	202.04	153.12	159.65	153.12
Eurodell coppa	Eurodell	186.95	206.95	143.90	163.90	143.90

| **Eurodell prosciutto** | Eurodell | 202.71 | 222.71 | 166.47 | 186.47 | 164.47 |

(Source: Perezgonzalez, 2011[1])

Correlations between indexes tend to be high and positive, indicating that cured meats would be organized in a similar hierarchy of nutritional unbalance by different international standards.

Illustration 4: Correlations between RDIs				
(n=21)	**BNI**	**WHO**	**US/CAN**	**AUS/NZ**
WHO	.996			
(p)	.000			
US/CAN	.978	.959		
(p)	.000	.000		
AUS/NZ	.982	.984	.957	
(p)	.000	.000	.000	
UK	.976	.958	1.000	.954
(p)	.000	.000	.000	.000

Methods

Research approach

- The original research was an exploratory study on the nutritional balance of cured meats in New Zealand in 2011.

Sample

- The research sample included 21 cured meat products[1]. The food products were collected in a convenient manner, looking more for a variety of products than a random sampling of the same. The selected products constituted a significant proportion of the population of sandwich-ready cured meats (ie, shaved cold-meats) available at supermarkets.

Materials & analysis

- Meat products were purchased from local supermarket chains in Palmerston North, New Zealand.
- Nutrition information for each meat product was retrieved from the nutritional information panel on each item, then assessed using the Balanced Nutrition Index™ (BNI™) technology *(see Perezgonzalez, 2011b[2])*.
- SPSS-v16 was used for variable computations, including BNI and international indexes, and statistical analyses, which included descriptives and correlations.

Generalization potential

Some of the products are produced internationally, although most of the shaving and packing seem to be made locally. Thus, the results of this study may be generalizable to the following populations (in order of decreasing generalization power):

- Australia.
- Internationally, if one assumes the same types of cured meats to be of approximately similar nutritional composition anywhere.

References

1. **PEREZGONZALEZ Jose D (2011a).** *Cured meats.* The Balanced Nutrition Index (ISSN 1177-8849), 2011, issue 4.

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.

3. **PEREZGONZALEZ Jose D (2011c).** *Nutritional balance of cured meats (v.1).* Journal of Knowledge Advancement & Integration (ISSN 1177-4576), 2011, pages 91-94.]

+++ **Notes** +++

4. Version 2 updates version 1[3] by differentiating between foodBNI and dietBNI results.

5. foodBNI = mean of BNI values (as cured meats are a mix of different meat products, a foodBNI based on the median is less informative than the mean).

6. dietBNI is the BNI value based on the average nutrient composition for the aggregated sample.

Want to know more?

BNI™ database
> The database offers individual nutrition analyses for foods, including the cured meat products referred to in above article.

BNI™ journal (2011, issue 4) - Cured meats
> 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.

Author

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

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page revision: 10, last edited: 6 Sep 2011, 13:43 GMT+12 (9 seconds ago)