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Health claims for food made in Australian magazine advertisements

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Health claims for food made in Australian magazine advertisements

Abstract

Aim: The aim was to describe the level of health claims being used in magazine advertisements, the categories of foods carrying health claims and the types of benefits being claimed for particular foods or food ingredients. Data were compared to similar studies of food labels and internet sites to reflect the impact of rule governance of the different media and highlight implications for the current proposed changes in food standards legislation. **Methods:** From January to June 2005 a survey of all print advertisements for food in Australia's 30 top-selling magazines was undertaken. The results were compared with those from a 1996 survey of health claims in Australian magazines and more recent surveys of claims for food on product labels and on internet sites. **Results:** The survey found 29.5% of 390 advertisements for food carried a health claim. Many of the claims were high-level claims (29%) or therapeutic claims (8%) which are not permitted by current food standards. The most common benefits being promoted related to cardiovascular disease, energy, cancer and weight control and most claims referred to the effect of the whole food, rather than specific ingredients. Results were similar to previous studies of food labels and internet sites. **Conclusions:** Health claims are being used widely in the print advertising of food products in Australia. Moreover, the presence of high-level and therapeutic claims in this media bears significant implications for the implementation of rules governing health claims on foods across the different media.

Keywords

advertising, food standard, health claim, magazine

Disciplines

Arts and Humanities | Life Sciences | Medicine and Health Sciences | Social and Behavioral Sciences

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Title: Health claims for food made in Australian magazine advertisements

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Contributions:

P Williams analysed the data and prepared the manuscript. L Tapsell and S Jones contributed to the study design, interpretation of results, and manuscript revision. K McConville assisted in collecting the original data and managed the database.

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1 **Abstract**

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3 advertisements, the categories of foods carrying health claims and the types of benefits being
4 claimed for particular foods or food ingredients. Data were compared to similar studies of
5 food labels and internet sites to reflect the impact of rule governance of the different media
6 and highlight implications for the current proposed changes in food standards legislation.

7

8 **Methods:** From January to June 2005 a survey of all print advertisements for food in
9 Australia's 30 top-selling magazines was undertaken. The results were compared with those
10 from a 1996 survey of health claims in Australian magazines and more recent surveys of
11 claims for food on product labels and on internet sites.

12

13 **Results:** The survey found 29.5% of 390 advertisements for food carried a health claim.
14 Many of the claims were high-level claims (29%) or therapeutic claims (8%) which are not
15 permitted by current food standards. The most common benefits being promoted related to
16 cardiovascular disease, energy, cancer and weight control and most claims referred to the
17 effect of the whole food, rather than specific ingredients. Results were similar to previous
18 studies of food labels and internet sites.

19

20 **Conclusions:** Health claims are being used widely in the print advertising of food products in
21 Australia. Moreover, the presence of high-level and therapeutic claims in this media bears
22 significant implications for the implementation of rules governing health claims on foods
23 across the different media.

24

25 **Key words:** Health claims, food standards, advertising, magazines

1 Introduction

2
3 Food is universally recognised as essential to health, yet claims that specific foods deliver
4 particular health benefits can be seen to attract formal rule governance when delivered to
5 consumers at large. This may reflect various aspects of a consumerist and egalitarian society
6 that includes the need for fair play, protection of the innocent and the sanctioned use of
7 science. In Australia and other consumerist societies, the use of health claims for foods has
8 been a contested area of public health policy for many years ¹⁻⁵. Although nutrient content and
9 function claims are commonly found on food products throughout the world, the regulation of
10 health claims varies widely ⁶, as does the site of regulation.

11
12 Currently in Australia and New Zealand nutrient content claims and some health maintenance
13 claims are allowed on food product labels, but other types of health claims that describe
14 potential health or performance effects from a food or ingredient are prohibited (with the sole
15 exception of those concerning the benefit of maternal consumption of folate in reducing the
16 risk of neural tube defects) ⁷. However, Food Standards Australia New Zealand (FSANZ) is
17 now developing a new food standard which will allow the regulated use of health claims
18 under two categories: general and high level, with therapeutic claims remaining illegal ⁸. This
19 follows the development of health claims legislation in other countries with substantial food
20 markets, a trend that reflects the continuing increase in our scientific knowledge of the
21 composition of food and the biological effects of its components.

22
23 When introduced, the new food standard will apply not only to claims on product labels but
24 also to all areas of associated advertising. Small amounts of research have been conducted
25 into the use of health claims on product labels both overseas and in Australia ⁹⁻¹² and there are
26 several studies in the US that have examined the prevalence and impact of health claims in

1 advertising ¹³⁻¹⁵. However in Australia, aside from one unpublished Masters research report ¹⁶,
2 there has been no systematic investigation of the use of health claims for food in print
3 advertisements. Since the new legislation will include advertisements, the prevalence of
4 health claims in this domain is of interest, with implications for the work of authorities and
5 marketers alike. As media that targets the general population, magazines provide a reasonable
6 point to conduct this observation, given that they may be the next source of written
7 information after food labels for those for whom the legislation is targeting protection.

8

9 This paper reports on data from a larger study examining consumer perceptions of healthy
10 eating campaigns, which included a survey of all print advertisements in 30 Australian
11 magazines over a six month period ¹⁷. The aim of the study reported here was to describe the
12 level of health claims being used in advertisements, the categories of foods carrying health
13 claims and the types of benefits being claimed for particular foods or food ingredients. Data
14 were compared to similar studies of food labels and internet sites to reflect the impact of rule
15 governance of the different media and highlight implications for the current proposed changes
16 in food standards legislation.

1 **Methods**

2 The 30 best-selling magazines in Australia were identified based on total annual sales
3 obtained from B&T Weekly's published circulation data (see footnote to Table 1 for a list of
4 the magazines). All advertisements for food or nutrition programs in issues from January to
5 June 2005 were collected, and those that contained any nutrition-related health claims were
6 scanned into a database, along with transcripts of all text, as previously described ¹⁷. If an
7 advertisement was repeated in several different magazines or issues, this was noted, but was
8 the advertisement was only recorded once for the purpose of this analysis.

9

10 Where health claims were found, they were categorised into one of the 14 claim categories as
11 defined in the FSANZ Initial Assessment Report to Proposal P293 ⁸. Based on a previously
12 published classification system ¹¹, advertisements were categorised according to claim. The
13 advertisements were also categorised according to 18 food descriptors used to classify foods
14 in the 1995 National Nutrition Survey ¹⁸, with one additional category including
15 advertisements for non-specific nutrition programs or logos (such as the Heart Foundation
16 Tick).

17

18 The claims were analysed for the following:

- 19 • Number and percentage of products with health claims in each food category
- 20 • Number and type of claim/s made
- 21 • Presence of specific reference to scientific studies to support claims
- 22 • Compliance with current food regulations (determined by assessment with current
23 regulations as outlined by Food Standards Australia New Zealand in Proposal 293 ⁸
24 and Standard 1.1A.2 (Transitional Standard – Health Claims) of the Food Standards
25 Code ¹⁹.

1 One of the authors (KM) extracted the information on the first three aspects of the analysis.
2 This was cross-checked by a second author (PW) who also assessed compliance with
3 regulations. For the purpose of this analysis only health claims that included specific
4 comment on the function or claimed effect of the food or an ingredient or property of the food
5 on consumer health or performance were recorded. Nutrient content claims (eg, 'contains
6 20% of daily calcium needs') or general product descriptions (such as 'healthy' or
7 'nutritious') were not included in the analysis, as they were not considered health claims as
8 defined within the Australian food standards.

1 **Results**

2 **Categories of food**

3 The search of the magazines collected a total of 390 eligible food advertisements, of which
4 115 included 205 different health claims. Of the health claims, more than 60% related to fruit
5 (24%; n=28), vegetables (15%; n=17), dairy foods (14% n=16) and non-alcoholic beverages
6 (10% n=12) (Table 1). No health claims were found in any of the magazine advertisements
7 for alcoholic beverages, confectionery, legumes and pulses, nuts and seeds, savoury sauces, or
8 savoury snack foods. The average number of claims per advertisement was 1.8, with one
9 artificial sweetener having the highest number of claims per advertisement (six claims).

10

11 **Types of claims**

12 Seven types of general claims and six types of high level claims were identified (Table 2).
13 There was a greater proportion of general-level claims (63%), followed by high-level claims
14 (29%), and therapeutic claims (8%). Of the general-level claims, the largest proportion were
15 for specific nutrient functions (28% of all claims), and of the high-level claims, the most
16 frequent were risk reduction claims in relation to a serious disease or condition (14.5%).

17

18 **Types of Benefits**

19 The 115 advertisements referred to 93 different nutrient/health relationships (Table 3). The
20 greatest proportion of claims related to whole foods (37.6% of claims), rather than any
21 specific nutrients or ingredients, and the health benefits most commonly claimed were in
22 relation to cardiovascular disease, energy, cancer and weight control (11.7%, 10.7%, 6.8%
23 and 6.3% of claims respectively). None of the high level claims related to the sole permitted
24 health claim for folate and prevention of neural tube defects.

25

1 Only twelve of the 115 advertisements with health claims (10%) cited evidence that
2 substantiated the claims and, of these, only five enabled location of the original scientific
3 references. Two of these related to the cholesterol lowering effect of sterol-containing
4 margarines; another referred to two studies on dairy foods and weight loss; one provided three
5 references to studies on the increasing prevalence of childhood obesity; and one cited two
6 references on the impact of vitamin C on the common cold.

7

8 **Comparison to food label and internet surveys**

9 The food categories associated with the highest number of advertisement claims in the
10 magazine survey were similar to those described in our survey of food product labels ¹¹.
11 Likewise, in both this study and our internet survey ²⁰, general-level claims were the most
12 common type of claim. Further, in both studies, the most common general level claims were
13 nutrient function claims and the most common high level claims were risk reduction claims in
14 relation to a serious disease or condition (Table 4).

15

16 Compared to the survey of food labels conducted in 2003, where 6.8% of health claims were
17 judged non-compliant with current regulations ¹¹, 37% of the health claims found in the print
18 advertisements would be seen as non-compliant because they were non-approved high level
19 or therapeutic claims. As was the case in the 2003 survey, none of the advertisements
20 included the sole high-level health claim currently approved for use in Australia (related to
21 folate and reduced risk of neural tube defects), although one general-level claim referred to
22 the importance of folate during pregnancy. Five of the top six categories which carried more
23 than 80% of the claims in the advertisements (fruit, vegetables, cereal products, dairy, non-
24 alcoholic beverages, and meat) were in the top six categories of foods carrying claims on

- 1 labels, with the notable exception of vegetables - which carried no health claims in the food
- 2 labels survey.

1 **Discussion**

2
3 This study found that health claims were prevalent in a considerable cross section of popular
4 Australian magazines. Magazines may be considered the next level of general print
5 information after food labels, and while not the same as newspapers and specialist
6 professional journals, the magazines under study did have considerable reach, with an
7 estimated average audience circulation per magazine ranging from 75,000 to 625,000 per
8 month. Food advertisements with health claims were found in all 30 magazines, but more than
9 60% were found in just six publications that were primarily targeted at women (Fresh,
10 Woman's Day, New Idea, Australian Good Taste, Super Food Ideas, and Australian Women's
11 Weekly)¹⁷.

13 **Types of claims**

14 High level claims were prevalent in this analysis. A previous survey of food advertisements in
15 18 Australian and drink and covering a range of different target groups, including both men
16 and women magazines (selected because they usually contained advertisements for food) was
17 conducted from January to August 1996, and reported a total of 397 advertisements for 262
18 different products. Only 20 of these (7.6%) were reported to contain high level health claims,
19 for 13 products, two of which (0.5%) were therapeutic claims¹⁶. An American survey
20 between 1998 and 2000 of food advertisements in 108 issues of the three most popular
21 consumer magazines read by women aged 25 and 64 yielded 1320 unique advertisements, of
22 which 13.1% were structure/function claims (general level health claims) and 4.5% were high
23 level health claims¹⁴. Most of the high level health claim advertisements were for just four
24 food groups: bread/cereals, fruit/juice, combination foods, and dairy, which were similar to
25 the top categories found in the study reported here. Both Australian studies confirm that high
26 level claims are being made in magazine advertisements, an activity that may come under

1 closer scrutiny with the forthcoming changes to food standards on health claims. However,
2 while the new regulations may make assessment of compliance easier, due to clearer
3 definitions of the categories of claims and substantiation requirements, the extent of
4 enforcement is still likely to be limited by the resources of State government food authorities.
5 Interestingly the absence of folate claims from print advertising confirmed that the initial
6 higher levels of use of this claim when it was first permitted have not continued on a
7 voluntary basis ²¹.

8
9 Most (63%) of the claims in the magazine advertisements, however, were general-level
10 claims. This was expected, given current regulation which prohibits the use of most high-level
11 claims. Of the general-level claims, most were nutrient function claims (70%). A nutrient
12 function claim describes the role of a food, a nutrient (or biologically active substance) in
13 terms of normal growth and development. As this claim type does not reference benefits
14 above normally accepted nutrient functions, it is likely that claims of this nature can be
15 scientifically substantiated more easily, and therefore are likely to be more appealing to
16 manufacturers. However, other types of general-level claims would require independent
17 substantiation under the proposed regulations for health claims, and monitoring of these
18 claims will be necessary to ensure that scientific substantiation meets the required rules. The
19 observed reference to scientific literature in some of the advertisements examined could be
20 seen as symbolising the relationship to come, with scientific dossiers being required to
21 substantiate health claims in future.

22

23 **Categories of food**

24 Food categories associated with claims were mostly from the core food groups outlined in the
25 Australian Guide to Healthy Eating ²². This compared well with a similar study reported in the

1 literature, where most of the advertisements were for dairy foods, and fats and oils, which
2 together accounted for greater than 25% of advertisements ¹⁶. In contrast though, in the latter
3 study the least proportion was for advertisements for fruits and vegetables combined (0.4%).
4 While studies of television advertising have found that advertising of the health benefits of
5 unprocessed basic foods like fruit and vegetables is relatively rare ²³⁻²⁶, this does not appear to
6 be the case for print advertising in our sample. It was noted, however, that during the six
7 month survey period of the study reported here, a series of 38 different advertisements from a
8 major retail chain promoting individual fresh fruit and vegetables was underway, and this may
9 have had an impact on the results. Categories that had no claims on pack or in print
10 advertising included: alcoholic beverages, confectionery, legumes and pulses, nuts and seeds,
11 and sauces. These might be considered more peripheral foods, and those for which a health
12 message is considered unsuitable (the food is not consumed primarily for health purposes), or
13 unnecessary.

14

15 **Types of benefits**

16 Bearing in mind that the number of examples provided was not large, it appeared that
17 cardiovascular disease, cancer and obesity/overweight were the most frequently referenced
18 diseases in all claims (Table 3), perhaps because of the stronger evidence for links with sub-
19 optimal nutrition. This was consistent with the findings from the label survey ¹¹ and from a
20 US survey conducted in 1998-2000, which reported the most frequent of advertising claims in
21 magazines there related to bone health, cholesterol levels, risk of cancer, and increased energy
22 and wellbeing ¹⁴. Bone health/osteoporosis, cholesterol and cancer are all well known
23 medically defined health issues regularly reported in the media, and highly prevalent in the
24 Australian community. In contrast, wellbeing and having energy appear to be consumer
25 constructs of health, something that warrants more formal research.

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Comparison to food label and internet surveys

The outstanding difference between the print advertisement analysis and the food label and internet surveys was the greater number of health claims found in the print advertisements seen as non-compliant because they were non-approved high level or therapeutic claims. It is possible that food companies and retailers are less inhibited about making non-compliant high level claims in print advertising, which can be quickly cancelled if challenged by regulators, compared to claims on product labels, where the costs of product recalls or packaging changes can be considerable and more damaging to a company’s reputation. An alternative explanation is that retailers (who were the source of 43 of the 115 advertisements found in this survey) are less aware of the restrictions on health claims contained in food standards. In the UK recently, one major retail chain (Asda) was fined for advertising which included disease prevention claims about the antioxidants in fresh mangoes fighting cancer²⁷. However even excluding the retailer advertisements for fruits and vegetables, 25% of the remaining advertisements from food manufacturers with health claims contained currently illegal high level claims, indicating that this higher incidence is not just due to the mix of advertisers at the time the survey was conducted. It is possible that when the new standard governing health claims comes into force there will be a reduction in the number of such claims here, as was observed in the US after the introduction of the Nutrition Labeling and Education Act in 1994, which provided clearer requirements for substantiation of health claims in advertising^{15, 28}.

1 **Conclusions**

2 Food is essential to health, yet health claims on food are seen to require consumer protection,
3 and in Australia new regulations of such claims will soon cover both food labels and all forms
4 of product advertising. Magazines represent a common form of print media that contain these
5 materials. This study found that health claims are being used widely in the print advertising of
6 food products in Australia. Moreover, their presence bears significant implications for the
7 implementation of rules governing health claims on foods across the different media.

8

9 **Acknowledgements**

10 This research was made possible by funding from the Australian Research Council.

1
2

Table 1. Food categories carrying health claims in magazine advertisements [†]

Food Category	Total number of advertisements	Number of advertisements with claims	Total number of claims	Mean number of claims per advertisement
Alcoholic beverages	0	0	0	0
Cereals and cereal products (inc bread, pasta, rice, breakfast cereals)	53	11	25	2.3
Confectionery	4	0	0	0
Eggs	2	2	2	1.0
Fats and oils (inc margarine)	17	6	7	1.2
Fish and seafood	9	2	3	1.5
Fruit and fruit juice	65	28	53	1.9
Snack bars (eg muesli and cereal bars)	8	6	9	1.5
Legumes and pulses	4	0	0	0
Meat and poultry (inc mixed dishes)	45	7	17	2.4
Dairy products and dairy substitutes	70	16	22	1.4
Non-alcoholic beverages (excluding milk and substitutes)	30	12	19	1.6
Nuts and seeds	1	0	0	0
Savoury sauces (inc salad dressings, gravies)	17	0	0	0
Snack foods (inc potato crisps, pretzels)	5	0	0	0
Soup	7	1	1	1.0
Sugar products (inc jam, honey) & sweeteners	15	5	10	2.0
Vegetables and vegetable juices	29	17	35	2.0
Activity/Program/Logo (eg NHF Tick)	9	2	2	1.0
Total	390	115 (29.5%)	205	1.8

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[†] Print advertisement between January and June 2005 in the following magazines: Australian Women's weekly, Woman's Day, New Idea, That's Life, Super Food Ideas, Readers Digest, TV Week, Better Homes & Gardens, Take 5, Cosmopolitan, Cleo, NW, Australian Good Taste, Dolly, Who Weekly, K-Zone, Girlfriend, Burkes Backyard, Australian House & Garden, FHM, Delicious, Marie Claire, Ralph, Fresh, Australian Family Circle, New Woman, Total Girl, Weight Watchers, Australian Home Beautiful, Donna Hay.

Table 2. Classification of health claims from advertisements for food

Claim classification †	Claim Type	Description	Examples from advertisements	Number of claims	% of claims
General-level claims	Food/Nutrient Function Claim – General health maintenance	Role in maintaining or supporting good health of a system or organ	<i>Assist in maintaining digestive health</i>	33	16
	Nutrient Function Claim – Specific health function	Role in maintenance of normal function, growth, development	<i>Calcium for strong bones</i>	58	28
	Diet Claims – general	Based on dietary guidelines but do not refer to a serious disease or condition	<i>A wide variety of food helps keep active kids healthy</i>	2	1
	Performance Claim	Benefits for performance or wellbeing	<i>Provides the energy that means children will perform better all round at school</i> <i>Helps with recovery from exercise</i>	23	11
	Enhancement Claim	Modifying a body function or structure without mentioning disease	<i>Improve blood flow</i> <i>Boost concentration</i>	8	4
	Symptom Relief	Reduce signs and symptoms but do not mention disease	<i>Relieve bloating, wind and abdominal pain</i>	1	0.5
	Risk Reduction – non-serious	How a diet, food or component can reduce risk of non-serious disease or condition	<i>Optimal hydration</i> <i>Ease insomnia</i>	5	2.5
High-level claims	Biomarker Management or Control	How a diet, food or component can help maintain a biomarker in a normal range	<i>Regulate the blood pressure</i>	3	1.5
	Biomarker Improvement	Can help reduce or improve an abnormal biomarker	<i>Reduce harmful LDL cholesterol</i>	7	3.5
	Diet Claim - serious	Based on dietary guidelines; refers to serious disease or condition	<i>Eating breakfast may reduce the risk of obesity and diabetes</i>	1	0.5
	Risk Reduction – serious	Assist in reducing the risk of a serious disease or condition	<i>With antioxidants which can decrease the risk of heart disease</i>	30	14.5
	Disease Management	How a food or component can help control or manage a serious disease or condition	<i>Helpful for people with diabetes</i>	6	3
	Slimming	How a food or component can help people to lose weight (not just a low joule content claim)	<i>Increase your chance of losing weight by including 3 serves of dairy each day</i>	12	6
Therapeutic claims *	Therapeutic Claim	Refers to the prevention, treatment or cure of a disease, ailment, defect or injury	<i>Used to treat cancers, skin problems, bowel, liver and heart disease</i>	16	8
Total				205	100%

† According to the claim classification framework included in the Initial Assessment Report to Proposal P293 Nutrition, Health and Related Claims ⁸

* In Australia the Therapeutic Goods Authority regulates therapeutic claims, while health claims on foods are regulated by Food Standards Australia New Zealand. Therapeutic claims are therefore separate categories of claims and are not considered health claims.

Table 3. Most commonly mentioned food component or property and benefit claimed in 205 health claims found in 115 magazine advertisements

Food component	Number	Percentage	Benefit claimed	Number	Percentage
Whole food	77	37.6	Heart and cardiovascular disease	24	11.7
Vitamins & minerals	14	6.8	Energy	22	10.7
Beta carotene	13	6.3	Cancer	14	6.8
Fibre	13	6.3	Weight	13	6.3
Calcium	11	5.4	Healthy digestion	12	5.9
Antioxidants	10	4.9	Cholesterol	10	4.9
GI	6	2.9	Teeth and bones	11	5.4
Low fat	6	2.9	Immunity	8	3.9
Protein	5	2.4	Healthy growth	7	3.4
Omega-3 fats	5	2.4	General good health	7	3.4
Vitamin C	5	2.4	Eyes	6	2.9
Lycopene	4	2.0	Skin	5	2.4
Carbohydrate	4	2.0	Fuller for longer	4	2.0
Vitamin A	3	1.5	Liver	4	2.0
Breakfast	3	1.5	Intestinal/bowel disease	4	2.0
Zinc	3	1.5	Hydration	3	1.5
Probiotic culture	2	1.0	Diabetes	3	1.5
Iron	2	1.0	Performance	3	1.5
Electrolytes	3	1.5	Antioxidant properties	3	1.5
Hydroxycinnamic acids	2	1.0	Dental decay	3	1.5
Mono-unsaturated fats	2	1.0	Respiratory disease	3	1.5
B Vitamins	2	1.0	Concentration	3	1.5
Capsaicin	1	0.5	Muscle development	3	1.5
Kilojoules	1	0.5	Longer lasting energy	3	1.5
Food variety	3	1.5	Disease prevention generally	3	1.5
Vitamin B12	1	0.5	Insomnia	2	1.0
Folate	1	0.5	Metabolism	2	1.0
Guarana	3	1.5	Lower blood pressure	2	1.0
			Nervous system	2	1.0
			Memory	2	1.0
			Gums and teeth	2	1.0
			Colds	2	1.0
			Cell damage	2	1.0
			Fertility	2	1.0
			Blood flow	1	0.5
			Anxiety	1	0.5
			Migraine	1	0.5
			Exercise recovery	1	0.5
			Brain development	1	0.5
			Pregnancy	1	0.5
Total	205	100%		205	100%

Table 4. Comparison of the prevalence of health claims on Australian food packaging, on internet websites and in print advertising

	Food labels 11	Internet sites 20	Print advertisements (this survey)
Year of survey	2003	2005	2005
Number surveyed	7850	1068	390
Percent with health claims	14.0	14.5	29.5
Percent of claims that were general-level	92.6	79.6	63.0
Percent of claims that were high-level	6.8	20.0	29.0
Percent of claims that were therapeutic	0.6	0.4	8.0

References

1. Calfee J and Pappalardo J. Public policy issues in health claims for foods. *J Pub Pol Marketing*. 1991;10:33-53.
2. Van Assema P, Glanz K, Brug J, and Kok G. Effects of health claims on eating habits of the Dutch population. *Eur J Public Health*. 1996;6:281-287.
3. Lawrence M and Rayner M. Functional foods and health claims: a public health policy perspective. *Pub Health Nutr*. 1998;1:75-82.
4. Public Health Association of Australia. *Policy Statement: Health claims on food*. 2002. Accessed: 5/8/04 <http://www.phaa.net.au/policy/Health%20claimsF.htm>.
5. Williams P. Consumer understanding and use of health claims for foods. *Nutr Rev*. 2005;63:256-264.
6. Hawkes C. *Nutrition labels and health claims: the global regulatory environment*. Geneva: WHO, 2004.
7. Australia New Zealand Food Authority. *Food Standards Code - Volume 2*. Canberra: Information Australia, 2000.
8. Food Standards Australia New Zealand. *Proposal P293 - Nutrition, Health and Related Claims*. Canberra: FSANZ; 2004.
9. LeGault L, Brandt M, McCabe N, Adler C, Brown A, and Brecher S. 2000-2001 Food label and package survey: an update on prevalence of nutrition labeling and claims on processed, packaged foods. *J Am Diet Assoc*. 2004;104:952-958.
10. Brecher S, Bender M, Wilkening V, McCabe N, and Anderson E. Status of nutrition labeling, health claims, and nutrient content claims for processed foods: 1997 Food Label and Package survey. *J Am Diet Assoc*. 2000;100:1057-1062.
11. Williams P, Ridges L, Yeatman H, Houston A, Rafferty J, Roesler A, Sobierajski M, and Spratt B. Nutrition function, health and related claims on packaged Australian food products - prevalence and compliance with regulations. *Asia Pacific J Clin Nutr*. 2006;15:10-20.
12. Williams P, Yeatman H, Zakrzewski S, Aboozaid B, Henshaw S, Ingram K, Rankine A, Walcott S, and Ghani F. Nutrition and related claims on packaged Australian foods; implications for regulation. *Asia Pacific J Clin Nutr*. 2003;12:138-150.
13. Teisl M, Levy A, and Derby B. The effects of education and information sources on consumer awareness of diet-disease relationships. *J Pub Pol Marketing*. 1999;18:197-207.
14. Parker B. Food for health: the use of nutrient content, health and structure/function claims in food advertisements. *J Advert*. 2003;32(3):47-55.
15. Ippolito P and Pappalardo J. *Advertising nutrition & health. Evidence from food advertising 1977-1997*. Washington, DC: Federal Trade Commission; 2002.
16. Kneale C and Truswell A. *Health claims: an exploration of the current debate in Australia*. Sydney: The University of Sydney Nutrition Research Foundation; 1997.

17. Jones S, McVie D, Tapsell L, and Williams P. The extent and nature of health messages in magazine food advertising in Australia. *Aust N Z J Pub Health* (submitted Dec 2006).
18. McLennan W and Podger A. *National Nutrition Survey Users' Guide 1995*. ABS Cat No 4801.0. Canberra: Australian Bureau of Statistics, 1998.
19. Food Standards Australia New Zealand. *Food Standards Code - Volume 2*. Canberra: Information Australia, 2002.
20. Dragicevich H, Williams P, and Ridges L. Survey of health claims for Australian foods made on Internet sites. *Nutr Diet*. 2006;63:139-147.
21. Australia New Zealand Food Authority. *Evaluating the folate-neural tube defect health claim pilot*. Canberra: ANZFA, 2000.
22. Smith A, Kellett E, and Schmerlaib Y. *The Australian Guide to Healthy Eating. Background information for nutrition educators*. Canberra: Commonwealth Department of Health, 1998.
23. Hill J and Radimer K. A content analysis of food advertisements in television for Australian children. *Aust J Nutr Diet*. 1997;54:174-181.
24. Hammond K, A W, and Caswell S. The extent and nature of televised food advertising to New Zealand children and adolescents. *Aust N Z J Public Health*. 1999;23:49-55.
25. Lohmann J and Kant A. Comparison of food groups and health claims appearing in food advertisements in 3 popular magazine categories. *J Am Diet Assoc*. 2000;100:1396-1399.
26. Neville L, Thomas M, and Bauman A. Food advertising on Australian television: the extent of children's exposure. *Health Prom Int*. 2005;20:105-112.
27. Guardian newspaper. *Asda fined for mango claim*. 2004. Accessed: 5/4/06 <http://society.guardian.co.uk/cancer/story/0,,1336439,00.html>.
28. Caswell J, Ning Y, Liu F, and Mojdzuska E. The impact of new labelling regulations on the use of voluntary nutrient-content and health claims by food manufacturers. *J Pub Pol Marketing*. 2003;22:147-158.