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Consumer understanding and use of health claims for foods

Abstract

Health claims for foods are permitted in an increasing number of countries but there are very few studies evaluating the effect of such claims on purchase behavior and consumer health. There are significant differences between countries, but in general consumers see health claims as useful, they prefer short succinct wording rather than long and complex claims, and they believe claims should be approved by government. Consumers view a food as healthier if it carries a health claim and this “halo” effect may discourage them seeking further nutrition information. Consumers do not clearly distinguish between nutrient content, structure-function and health claims. There is some evidence that use of health claims improves the quality of dietary choices and knowledge of diet-disease relationships.

Keywords

health claims, consumer, food label, NLEA

Disciplines

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

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1 **Abstract**

2

3 Health claims for foods are permitted in an increasing number of countries but there are
4 very few studies evaluating the effect of such claims on purchase behavior and consumer
5 health. There are significant differences between countries, but in general consumers see
6 health claims as useful, they prefer short succinct wording rather than long and complex
7 claims, and they believe claims should be approved by government. Consumers view a
8 food as healthier if it carries a health claim and this “halo” effect may discourage them
9 seeking further nutrition information. Consumers do not clearly distinguish between
10 nutrient content, structure-function and health claims. There is some evidence that use of
11 health claims improves the quality of dietary choices and knowledge of diet-disease
12 relationships.

13

1 Introduction

2

3 There are several types of nutrition and health claims found on food labels in addition to
4 the simple listing of the nutrients present in a food product. *Nutrient content claims*
5 highlight specific nutritional features of a food, typically about the presence or level of a
6 nutrient (eg, “low in fat”, “high fibre”, “reduced salt”, “sugar free”), while *health claims*
7 are statements linking food components to a desired state of health. According to the
8 definitions in draft Codex Alimentarius guidelines there are three types of health claims ¹:

9

- 10 • *nutrient function claims*, that describe the role of a nutrient in normal
11 physiological growth, development and functions of the body (eg, folate is
12 important for red cell formation)
- 13 • *other function claims* (previously called enhanced function claims), that make
14 claims that nutrients or other substances may improve or modify the normal
15 functions of the body (eg, calcium may help improve bone density)
- 16 • *reduction of disease risk claims* (eg, fruits and vegetables may reduce the risk of
17 some cancers).

18

19 Nutrient content and function claims are commonly found on food products throughout
20 the world, however the regulation of health claims that promise health enhancement or
21 reduction in the risk of disease varies widely. In many countries, such claims are
22 forbidden or permitted only after approval by a national regulatory body. A recent World
23 Health Organisation survey of the global regulatory environment for health claims

1 reported that among 74 countries and areas reviewed, the greatest proportion (35) had no
2 regulation of health claims; 30 disallowed any reference to disease in a claim, 23 allowed
3 nutrient function and other claims and only 7 permitted specified disease risk reduction
4 claims or have a specific framework for approval of such claims ².

5
6 For over fifteen years there has been an ongoing debate about the value of health claims as a
7 strategy to help consumers and support the development of a healthier food supply.

8 Among the earliest and most influential commentaries on this policy issue were those of
9 Calfee and Pappalardo, from the Bureau of Economics in the US Federal Trade
10 Commission (FTC) ³. They reviewed the influence of the 1984 Kellogg All-Bran
11 promotion in the US that provided advice from the National Cancer Institute on the role
12 of dietary fibre in the prevention of cancer, noting that it was this campaign that
13 ultimately led the US Food and Drug Administration (FDA) to develop a new regulatory
14 regime for health claims in that country and the passing of the “Nutrition Labeling and
15 Education Act of 1990” (NLEA) by the US Congress. They argued that health claims in
16 advertising can transform markets from ones in which foods are promoted purely on
17 matters of taste, convenience and other factors unrelated to health, to markets in which
18 promotion focuses on health. It is claimed that nutrition labels and health claims on food
19 have the potential to contribute to the improvement of public health by assisting
20 consumers to make better informed food choices. Furthermore allowing truthful diet-
21 disease claims by manufacturers may benefit consumers since this increases the
22 competitive pressures on companies to market the nutritional features of foods ⁴.

23

1 Others have supported this viewpoint and agree that health claims can be seen as a
2 legitimate educational tool, which will inform and affect consumer behaviour ⁵. The
3 American Dietetic Association, on the basis of the strong scientific underpinning of the
4 NLEA, supports the use on food products of health claims that have been pre-approved
5 by the FDA, but also stresses the importance of health claims on foods being supported
6 by an adequately funded public program of nutrition education and health promotion ⁶.
7 Without this, it is claimed, there is the possibility that consumers will receive unbalanced
8 messages, with greater advertising of value-added highly processed products rather than
9 basic foods such as vegetables and fruit, or that health claims could have negative effects
10 such as preoccupation with specific diseases, distortion of dietary habits,
11 oversimplification of dietary guidance and erosion of confidence in information on the
12 food label ⁷.

13

14 The concern that health claims cannot function to help consumers without a supportive
15 educational environment has been voiced by others ⁸. In commenting on the Australian
16 trial of a health claim for folate, Bower suggested that folate health claims on food alone
17 cannot adequately address the need for consumer education; they are better thought of as
18 a means of easily identifying foods rich in folate once the target group is informed of
19 their existence and the reasons for consuming them ⁹.

20

21 Many commentators in the US have expressed concern over the initial FDA health claim
22 regulations that prescribed often lengthy and complex health claims to be used in the
23 early days of NLEA. Two years after NLEA there were few health claims used in the

1 marketplace, mostly because food manufacturers found the labelling requirements
2 onerous – particularly the long mandated wording which was not attractive to consumers
3 ¹⁰. The Keystone report of a two-year dialogue in facilitated workshops with 65 key
4 individuals examining health claims in the US made two key recommendations: (1) to re-
5 examine the regulation of health claims to improve flexibility of wording and evaluate the
6 use of split claims, and (2) that federal resources be provided to help consumers
7 understand, trust and use NLEA-regulated information including nutrient content and
8 health ¹¹.
9
10 Nonetheless, despite over ten years experience now of NLEA in the US, there is still
11 ongoing debate over the effectiveness of health claims to support public health. The
12 American Medical Association and the Centre for Science in the Public Interest have
13 claimed that consumers will be misled and confused by allowing claims with lower levels
14 of substantiating evidence ¹². The Public Health Association of Australia has opposed the
15 proposed introduction of health claims in that country arguing the evidence that health
16 claims inform consumers or improve food choices is inconclusive ¹³. Some claim that
17 health claims have been shown to increase the sales of more nutritious products that are
18 consistent with healthy dietary patterns ³; others say there is little evidence that health
19 claims make a positive impact on healthful choices ¹⁴ or that the benefits are likely to be
20 restricted to health conscious consumers who are willing to pay for premium products
21 with health claims and added functional benefits ¹⁵. Consumer organisations also are
22 sceptical of their value and have argued that “health claims on processed foods help no-
23 one but the people trying to sell them” ¹⁶.

1

2 Prohibiting all health claims in some countries, or those that refer to diseases, has not
3 prevented the proliferation of a wide number of potentially confusing or misleading
4 “soft” claims whereon food products that may be interpreted by consumers as implied
5 health claims (eg, “makes you healthy”). According to one commentator, manufacturers
6 have “made the formulation of soft claims into a fine art, creating claims that imply
7 health effects without actually naming a disease”¹⁷.

8

9 From a commercial point of view, the use of health claims has had mixed results.
10 Evidence from the US and Europe suggest that they can increase market share for
11 products¹⁸, and it is claimed that they have improved communication to consumers about
12 the role of diet in disease prevention, supported increased clinical research on food
13 ingredients and stimulated product development¹⁹. But there have also been some
14 significant marketplace failures for foods with claims²⁰. The recent WHO review of
15 health claim regulations concluded that too little is understood about the role health
16 claims play in nutrition education and that there is insufficient evidence concerning their
17 effect on diet and public health².

18

19 There are methodological challenges in any attempt to evaluate the impact of the use of
20 health claims on consumer behaviour or health. Anecdotal reports from marketers of
21 established food brands suggest that, for the majority of food products, health messages
22 influence purchases with only one third of consumers at best. Unlike taste, cost or
23 convenience, consumers usually cannot evaluate the truth of health claims. Health claims

1 are extraordinarily affected by the day-to-day communications context and they require
2 consistent reinforcement to maintain sales effectiveness.

3

4 This review is based on a search of published and unpublished research into consumer
5 understanding and use of health claims. Electronic databases (Australasian Medical
6 Index, Cinahl, Cochrane, Expanded Academic Index, Lexis, Medline, Proquest,
7 Psychinfo, ScienceDirect and Synergy) were searched using combinations of the
8 following search terms: food, nutrition, diet, labelling, labeling, label, package,
9 information, health claim, and consumer. Additional hand searching was carried out
10 using the reference lists of relevant articles identified during the electronic search,
11 supplemented by recommendations from key informants working in international
12 regulatory agencies. The primary focus of the review was consumer understanding and
13 use of health claims. The search excluded studies or reports about consumer
14 understanding of nutrition labelling or nutrient claims in general, which have been
15 systematically reviewed elsewhere ²¹. Eligible studies were assessed for scientific quality
16 using the methods and criteria described by the European Heart Network, and studies
17 with a low quality rating were excluded ²¹. Since the first explicit use of health claims
18 only appeared on food products in 1984, the period of review was limited to the twenty-
19 year period from 1984 to 2004. All relevant investigative studies have been included in
20 the review, but only a selection of the editorial or policy commentaries have been referred
21 to in the Introduction to illustrate the range of opinions on this topic.

22

1 The main aim of this review is to summarise the descriptive studies related to consumer
2 behaviour when they read health claims, in order to inform decisions related to health
3 claims regulation, but findings from research on health outcomes has also been
4 considered. The specific objectives were to assess:

- 5 1. to what extent consumers want and use health claims on food products
- 6 2. how consumers interpret and understand health claims
- 7 3. what influence health claims have on consumer knowledge and purchase
8 behaviour
- 9 4. to what extent health claims have an influence on health outcomes, and
- 10 5. what gaps exist in current research in this area.

11

12 For the purposes of reporting, the studies have been divided into three broad categories:

- 13 1. Survey and focus group studies investigating consumers attitudes to health claims
14 on foods
- 15 2. Experimental studies, where consumer reactions to different forms of claims have
16 been examined
- 17 3. Outcome studies, which have attempted to examine purchase behaviour changes
18 or health impacts associated with health claim use.

19

1

2 **Surveys and Focus Groups**

3 In order for health claims to have an impact on purchasing behaviour, consumers have to
4 be exposed to them. In many countries health claims are still prohibited and, aside from
5 the US, there is little information on the prevalence of health claims in the marketplace.
6 In the US, where health claims have been permitted now for over 10 years, it is
7 noticeable that the proportion of packaged foods carrying claims is relatively low. Several
8 supermarket surveys there have found between 2-4% of products with health claims, a
9 level largely unchanged from 1997 to 2001, with the highest proportion carried on cereal
10 products²²⁻²⁴. Similarly low levels have been reported in studies of television and print
11 advertisements for foods, and the level is less than that before the introduction of NLEA
12 legislation that now regulates claims^{25,26}. Nonetheless, introduction of NLEA does
13 appear to have substantially reduced the level of misleading health claims in
14 advertisements in the US^{23,27}.

15

16 A variety of surveys, interviews and focus group with consumers in several countries
17 indicate that health claims are seen as useful and do influence attitudes. In Canada more
18 respondents in a telephone survey about products with functional benefits believed that
19 packaging should promote the health benefit it provides (45%), rather than only the
20 presence of the component itself (34%)²⁸. In other words, they preferred health claims to
21 content claims and 47% rated them as very useful compared to less than 10% who saw
22 little or no value for them²⁹. Studies have found similar supportive views amongst
23 consumers in Australia³⁰, Denmark³¹, Ireland³², Scotland³³, Finland³⁴, the UK³⁵ and

1 the US ³⁶. The reasons for liking health claims seem to be related to general difficulties in
2 interpreting existing nutrition information on labels. In a French study three-quarters of
3 consumers said they only sometimes or never used the nutrition information on food
4 mostly because they believe it to be too complicated ³⁷. In the UK in 2003, 29% of
5 consumers believed there was too little information on the label to help them find healthy
6 foods ³⁵.

7
8 While consumers may say that health claims are useful, the extent to which they use them
9 is less clear. Consumers claim they often use information on labels to find foods that are
10 good for their health ³⁸, but most consumers only read labels when they are contemplating
11 buying a new product for the first time or when an alternative brand is on special ³⁹. It has
12 been suggested that the impact of claims is greatest on those who already tend to buy a
13 particular type of product; people are unlikely to buy a new type of product because of a
14 claim ²⁹. In 2003, Australian research (at a time when only one health claim about folate
15 was legal) found 14% of people reported ever using a health claim ⁴⁰ and in the UK,
16 when asked which information they looked for on labels, around 20% mentioned health
17 claims ³⁵. It is clear that usage is generally higher in those who are better educated, older,
18 female and with an interest in nutrition ^{36,41}. A lack of nutrition knowledge can limit
19 consumers' abilities to understand or evaluate a health claim ⁴² and this lack of
20 understanding can diminish the credibility of claims ⁴³.

21
22 There is a high level of consumer scepticism about all aspects of information on food
23 labels, including health claims, and concern is often expressed over manufacturers using

1 claims just as a sales tool ⁴². Trust in health claims is not necessarily related to the
2 strength of promise made in the claims ³⁴ and messages are more likely to be believed
3 when they repeated frequently by different and trusted sources ⁴⁴. In France in 2002
4 three-quarters of consumers interviewed said they did not believe claims about health
5 benefits on foods ³⁷. In the UK just over half of people interviewed in 2003 were
6 concerned about the accuracy of health claims, although most of these were “fairly”
7 rather than “very” concerned ³⁵. Paradoxically, in a telephone survey conducted by the
8 FDA, consumers who reported more use of health claims also reported being more
9 sceptical of them ⁴⁵. Consumers often assume that claims on foods have already been
10 approved by government authorities, even when there are explicit statements to the
11 contrary ⁴⁶, and most studies show strong agreement from consumers with the idea that
12 health claims should be approved ^{29, 36, 39, 47}.

13

14 The type of health claim that is preferred by consumers is unclear. Research in Sweden
15 suggested consumers there preferred claims where promotion of health was emphasised
16 rather than those associated with illness ⁴³, but studies in the UK, other parts of
17 Scandinavia and the US report that claims about prevention of chronic diseases or health
18 enhancement were of more interest to consumers than claims about normal physiological
19 function or health maintenance ^{31, 33, 48}. Some of these differences may be due to cultural
20 factors between countries. It is a common finding in the UK, Finland and France that
21 consumers do not make clear distinctions between nutrition content claims, structure-
22 function claims and health claims ^{34, 37, 44}. The research shows that a hierarchy of claims
23 based a purely scientific structure does not correspond with consumer responses or

1 understanding, which is often of a non-scientific kind ⁴⁸. Once consumers are familiar
2 with a nutrient-disease relationship (eg calcium and bone health) a mere nutrient content
3 claim may be interpreted as a health claim.

4

5 Consumers generally don't like long and complex, scientifically-worded claims on foods
6 and they prefer split claims – with a succinct statement on the front of pack and more
7 detailed information provided elsewhere on the package ⁴²⁻⁴⁴. In some studies consumers
8 seem particularly sceptical of claims with qualifying words such as “may” or “could” ⁴²⁻
9 ⁴⁴, but this is not a universal finding. In a US study of claims about probiotic cultures,
10 consumers were wary about claims that were too broad or absolute to be credible and
11 preferred “may reduce” or “helps reduce” claims ⁴⁷. Disclaimers about the level of
12 scientific substantiation for a claim do not seem to be attended to or understood by
13 consumers ⁴⁶.

14

15

16 **Experimental Studies**

17 A number of studies have been conducted with consumers, showing them mock food
18 packs with variations in labelling format, to evaluate the impact of health claims on
19 beliefs and attitudes about the product. It should be noted however that all but one of
20 these published studies were conducted in the US and their relevance to consumers in
21 other countries is uncertain.

22

1 Perhaps the largest and most cited study of this kind is one conducted for the FDA, using
2 face-to-face mall intercept interviews with 1403 primary food shoppers in eight cities
3 across the US. The variables included three products (cereal, lasagna and yoghurt) and
4 ten label formats, testing the effect of different lengths of claims, their position on the
5 label and types of endorsement on consumers' evaluation of product healthiness and
6 purchase intent⁴⁹. The results were complex but indicate that:

- 7 • when a product features a health claim, respondents view the product as healthier and
8 state they are more likely to purchase it
- 9 • the effect of health claims on label reading was to reduce the likelihood consumers would
10 read the nutrition information on the back of the package
- 11 • brief health claims were more effective than long ones and there was no indication that
12 short health claims encouraged inappropriate or exaggerated beliefs about products
13 health benefits compared to long claims
- 14 • claims that provided new information had a positive effect on attitude to the product;
15 claims that provided no new information had no effect
- 16 • health claims seemed to have limited ability to communicate educational information;
17 more than 20% respondents did not acknowledge that a product had any health benefits
18 even when carrying an explicit claim
- 19 • perception of health benefits seemed largely based on prior beliefs about the product
20 rather than specific information provided by the claims
- 21 • nutrient content claims appeared to have similar effects to health claims
- 22 • endorsements and split claims had little impact on communication effectiveness.

23

1 Some of these findings have been replicated in other studies, but some have not. The
2 most consistent finding is that health claims do increase consumers' expectations about
3 the healthiness of a product and produce more positive attitudes toward its nutritional
4 value ⁵⁰⁻⁵⁵. This effect is found for claims in advertisements as much as on labels ⁵¹. This
5 influence can result in a general "halo" effect, affecting belief about nutritional attributes
6 unrelated to the health claim ⁵⁰. A study of 1700 consumers in shopping malls conducted
7 by the US Federal Trade Commission (FTC) found that even warning statements about
8 risk-increasing nutrients in a product (such as a high sodium content) were overlooked by
9 a significant proportion of consumers in the presence of health claim ⁵⁶.

10

11 Consistent with the findings of several of the surveys reported earlier and the FDA
12 results, several other experimental studies have also found a preference for shorter or split
13 claims. Wansink et al ⁵⁷ report that the presence of short health claim on the front label
14 generates more specific attribute-related thoughts, more inferences, and creates a more
15 believable and positive image in the consumers' mind than does a longer health claim. In
16 fact consumers who were given longer claims were no more likely to believe in the
17 claimed health benefit than those who saw no front label information. This may be
18 because consumers find such claims take too long to read and understand. In another
19 study where participants examined packages of soy protein patties, with three versions of
20 a health claim about heart disease risk, and were asked to record their thoughts and
21 beliefs, it was found combining short health claims on the front with full health claims on
22 the back of the package lead consumers to more fully process and believe the claim;
23 consumers tended to ignore or not understand the longer claim on front of pack ⁵⁸.

1

2 Some studies have supported the FDA finding that the presence of a health claim is
3 associated with a greater probability that a search for information is limited to the front
4 panel only, ignoring the nutrition information panel, especially for those consumers with
5 lower education ⁵⁹, or that the presence of nutrition facts information did not moderate the
6 effect of a claim ⁵⁵. However this is not a consistent finding. One mailed survey of
7 primary household shoppers found they relied on the nutrition facts panel to a greater
8 extent than they do on claims on the front of pack ⁶⁰. Mitra et al ⁵² reported that when
9 claims about heart health and four different versions of a nutrition facts panel were
10 presented together on mock packages of a frozen dinner, the claim had no significant
11 effect on product evaluation and consumers could correctly interpret the nutrition
12 information panel even in the presence of contradictory health claims.

13

14 At least one other study supports the finding of the FDA investigation that health claim
15 information that is new or unfamiliar has greater impact. In a study of consumers in
16 Denmark, Finland and the US, Poulsen reports that there was a considerably greater
17 effect of a health claim about oligosaccharides (which very few consumers knew about),
18 compared to a claim for omega-3 fats, in three different products ⁵⁴. Other factors that
19 have been reported to influence consumer acceptance of a health claim are medical
20 community support for the claim ⁶¹ and whether consumers have an interest in nutrition
21 information generally.

22

1 The accuracy of consumers' interpretation of health claims has been examined in only a
2 few studies. Andrews et al ⁶² showed primary shoppers various labels for canned soup
3 and found that a claim of "healthier" resulted in a slightly more favourable and
4 misleading evaluation of the sodium content of the product, but the claim had no
5 significant effect on belief that consumption would reduce disease risk. One FTC study
6 has tested consumers' ability to interpret qualified disclosures about the scientific support
7 of the alleged benefits (as are now appearing in qualified health claims in the US). The
8 authors found consumers do seem to be able to correctly interpret some strong
9 disclaimers, such as explicit references to inconsistent study results, but mildly qualified
10 statements (eg "it looks promising, but scientists won't be sure until longer research is
11 completed") did not lower consumer certainty ratings significantly ⁵⁶.

12

13

14 **Outcome Studies**

15 Although surveys of consumer opinions and experimental studies are useful, on their own
16 they are not sufficient to evaluate the ultimate impact of health claims on consumer
17 behaviour and health outcomes. In reality, it is known that what consumers say in surveys
18 and focus groups often does not translate into behaviour in the supermarket. One study
19 asking British and Australia shoppers to think aloud during shopping for a predetermined
20 list of products found that health-related endorsements (such as the Heart Foundation
21 "Pick the Tick" symbol) were rarely used during actual food selection, although subjects
22 had claimed in interviews to use them ⁶³. A full evaluation of the impact of health claims
23 would ideally consider not only product purchase behaviour, but also changes in nutrition

1 knowledge, awareness of diet-disease relationships, and ultimately impacts on total diet
2 quality and health status. In fact, after more than a decade of experience of health claims
3 on foods, there has been remarkably little direct evaluation of the impact on consumers
4 using these endpoints and none attempting to measure ultimate health impacts.

5
6 Before the introduction of NLEA, estimates of the discounted life-years gained across the
7 US in the first 20 years after implementation of the Act ranged from a high of 2.1 million
8 to a low of 40,000, however most of this estimate was related to the mandatory
9 requirement for nutrition content information on labels rather than the impact of possible
10 health claims permitted under NLEA ⁶⁴. A study by Moorman ⁶⁵ with observation and
11 interviews with over 1000 US supermarket shoppers before and after NLEA concluded
12 that consumer acquisition and comprehension of nutrition information (measured in time
13 spent searching per brand) had increased after NLEA, but so did consumer scepticism
14 about the nutrition information on labels. Again, however, the impact of health claims
15 was not separated from other nutrition information components of the new label format.

16
17 A few studies attempting to measure the effect of claims on purchase behaviour have
18 relied on examining sales data and correlating this with presence or absence of health
19 claims. It has been claimed by some food companies that health claims can grab the
20 attention of consumers and increase the consumption of healthful products. There were
21 positive increases in sales of both oats and folate-enriched breakfast cereals after claims
22 or media coverage about the health benefits of these products ^{66,67}. However, claims
23 alone do not guarantee success for new products and there have been notable failures of

1 products with health claims in the market, including the Kellogg psyllium-enriched
2 “Ensemble” range, and Campbell’s “Intelligent Cuisine”¹⁹.

3
4 Some of the best evidence of the benefits from a health claim comes from the pre-NLEA
5 experience of Kellogg Company in the US carrying a message on All-Bran packs from
6 the National Cancer Institute, focusing on the link between dietary fibre and cancer. A
7 study by the FTC concluded that the use of that health claim led to a significant increase
8 in consumer knowledge of the fibre-cancer relationship, greater fibre cereal consumption,
9 and product innovation bringing more high fibre products to market⁶⁸. Others have
10 criticised this conclusion, noting that there was no attempt to consider other consumer
11 education programs conducted by government and other health authorities during the
12 period under study⁶⁹. Another study by Mathios⁷⁰ examined the sales of cooking oils in
13 New York before and after the introduction of NLEA. Before NLEA firms actively
14 competed with explicit health claims about heart-health, promoting lower saturated fat
15 and higher monounsaturated fat (MUFA) choices. After NLEA this was prohibited and
16 the study found consumers shifted purchases towards nutritionally inferior cooking oils
17 with higher saturated fat and lower MUFA levels. The only three supermarkets where the
18 level of MUFA increased were in the areas with the highest levels of education. Although
19 this study is limited by not measuring total consumption of saturated fat from oils, it
20 suggests that elimination of health claims on cooking oils may have stifled the flow of
21 useful information to consumers, especially the less educated.

22

1 In Australia, a pilot health claim related to folate and neural tube defects (NTD) was
2 permitted on a voluntary basis in 1998 and several studies attempted to evaluate the
3 impact on consumer knowledge and behaviour. Inclusion of a specific claim explaining
4 the role of folate in preventing birth defects in TV and print advertising and on food
5 packs appeared to increase consumer awareness and knowledge of this diet disease
6 relationship to a greater extent than similar promotions without an explicit health claim
7 ⁷¹. Knowledge of good food sources of folate also increased, but there was no evidence of
8 change in the purchase of foods with the folate health message ⁷². However the folate-
9 NTD claim had a very specific target audience and occurred at the same time as other
10 education activities, including promotion of folate supplements to women, so the extent
11 to which the findings of this pilot can be generalised to other claims is debatable.

12
13 In an attempt to separate the effect of public health education efforts from that of health
14 claims for foods, Teisl et al ⁷³ correlated data on people's awareness of diet-disease
15 relationships obtained from the US Health and Diet Surveys (1984-95) with newspaper
16 articles and advertising citing specific diet-disease relationships. Higher awareness levels
17 were associated with time periods of increased newspaper activity; lower levels of
18 awareness were associated with time periods of increased advertising activity. One
19 interpretation of this result is that consumers place a relatively low level of credence on
20 producer-provided health information (including health claims) whereas news media
21 seems to educate the public and provide a general stimulus to the purchase of healthier
22 products. However, in this study, health claims probably did not alter consumer

1 awareness because very few health claims were made in advertising (less than 3% of all
2 advertisements) so nutrient content claims were also included in the study.

3

4 There is one study that has attempted to relate use of health claims with diet quality^{74, 75}.

5 It took data on label use in a sample of 5343 people from the 1994-96 Diet and Health

6 Knowledge Survey and used information from the Continuing Survey of Food Intakes by

7 Individuals to compare the Healthy Eating Index (HEI) score – a USDA measure of total

8 diet quality, with a maximum value of 100 – of individuals before and after using

9 different food label elements. The authors controlled for personal and household

10 characteristics such as age, gender, level of education, ethnicity, employment status and

11 income through the use of an endogenous switching regression model. The data show that

12 label use generally has a positive effect on improving diet quality and that improvement

13 is highest when consumers use health claim information on the label - greater than the

14 effect of use of ingredient lists, nutrient content claims, serving size or the nutrition panel.

15 Improvements in HEI scores ranged from 4.3 points when the nutrition information panel

16 was used to 6.1 for health claims.

17

18

19 **Conclusions**

20 It is clear that more research is needed to understand the impact that health claims could

21 or do have on food choice and health, especially outside of the US. The studies that we

22 have often provide contradictory or inconclusive results and there are likely to be

23 significant differences between consumers in various countries, between different

1 consumer segments and between reactions to claims on new versus existing food
2 products. The drivers of consumer purchasing behaviour are complex and a number of
3 factors other than advertising claims and price, such as concerns about nutrition and
4 consumer dispositions towards innovativeness and susceptibility to normative influence,
5 will affect the probability of trial of new products.

6

7 However there are some common findings to be drawn from the studies that have been
8 reviewed:

- 9 • Health claims on foods are seen by consumers as useful and when a product
10 features a health claim they view it as healthier and state they are more likely to
11 purchase it
- 12 • Consumers are sceptical of health claims from food companies and strongly agree
13 with the idea that health claims should be approved by government
- 14 • Consumers do not make clear distinctions between nutrition content claims,
15 structure-function claims and health claims
- 16 • Consumers generally don't like long and complex, scientifically worded claims on
17 foods and prefer split claims – with a short succinct statement of the claim on the
18 front of pack

19

20 The experimental studies do raise the possibility that the “halo” effect of a health claim might
21 discourage consumers from seeking more information to evaluate the full nutritional value of a
22 food. However, although the evidence is limited, the results from all the case studies
23 examining particular claims are consistent with the proposition that health claims can support

1 improved nutrition awareness and better food choices. There does not appear to be any
2 evidence to date of adverse consequences from the use of health claims, but the low level of
3 use of claims on products makes studying this possibility difficult and further research is
4 needed.

5

6

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10

1 **References**

2

- 3 1. Codex Alimentarius Commission. Appendix IV: Draft guidelines for use of
4 nutrition and health claims, in *Report of the Thirty-First Session of the Codex*
5 *Committee on Food Labelling*. Rome: Codex Alimentarius; 2003.
- 6 2. Hawkes C. *Nutrition labels and health claims: the global regulatory environment*.
7 Geneva: WHO; 2004.
- 8 3. Calfee J and Pappalardo J. Public policy issues in health claims for foods. *J Pub*
9 *Pol Marketing*. 1991;10;33-53.
- 10 4. Mathios A and Ippolito P. Food companies spread nutrition information through
11 advertising and labels. *Food Rev*. 1998;21;38-44.
- 12 5. Patch C, Tapsell L, and Williams P. Dietetics and functional foods. *Nutr Diet*.
13 2004;61;22-29.
- 14 6. American Dietetic Association. Position of the American Dietetic Association:
15 Functional foods. *J Am Diet Assoc*. 2004;104;814-826.
- 16 7. Earl R. Health claims on food labels: an American Dietetic Association
17 perspective (ADA timely statement). *J Am Diet Assoc*. 1988;88;235-8.
- 18 8. Lawrence M and Germov J. Future Food: The politics of functional foods and
19 health claims, in *A sociology of food and nutrition: the social appetite*, J. Germov
20 and L. Williams, Editors. South Melbourne: Oxford University Press; 2004.
- 21 9. Bower C. What can we say about health claims? *Aust J Nutr Diet*. 2001;58;209-
22 210.
- 23 10. Petruccelli P. Consumer and marketing implications of information provision: the
24 case of the Nutrition and Education Act of 1990. *J Pub Pol Marketing*.
25 1996;15;150-153.
- 26 11. The Keystone Center. *The Final Report of the Keystone National Policy Dialogue*
27 *on Food, Nutrition, and Health*. Keystone CO and Washington DC: The Keystone
28 Center; 1996.
- 29 12. Mitka M. Food fight over product label claims. Critics say proposed changes will
30 confuse consumers. *JAMA*. 2003;290;871-875.
- 31 13. Public Health Association of Australia, *Policy Statement: Health claims on food*.
32 <http://www.phaa.net.au/policy/Health%20claimsF.htm>.
- 33 14. Lawrence M and Rayner M. Functional foods and health claims: a public health
34 policy perspective. *Pub Health Nutr*. 1998;1;75-82.
- 35 15. Van Assema P, Glanz K, Brug J, and Kok G. Effects of health claims on eating
36 habits of the Dutch population. *Eur J Public Health*. 1996;6;281-287.
- 37 16. Australian Consumers Association. Food or medicine? Health claims on food.
38 *Choice*. 2004;June;21-23.
- 39 17. Katan M. Health claims for functional foods: regulations vary between countries
40 and often permit vague claims. *BMJ*. 2004;328;180-181.
- 41 18. Heasman M and Mellentin J. *The functional food revolution*. London: Earthscan;
42 2001.
- 43 19. Fulgoni V. History and industry benefits of health claims. *Nutr Today*.
44 2001;36;119-120.

- 1 20. Nestle M. *Food Politics*. Berkeley: University of California Press; 2002.
- 2 21. Cowburn G and Stockley L. *A systematic review of the research on consumer*
- 3 *understanding of nutrition labelling*. Brussels: European Heart Network; 2003.
- 4 22. Brecher S, Bender M, Wilkening V, McCabe N, and Anderson E. Status of
- 5 nutrition labeling, health claims, and nutrient content claims for processed foods:
- 6 1997 Food Label and Package survey. *J Am Diet Assoc*. 2000;100;1057-1062.
- 7 23. Caswell J, Ning Y, Liu F, and Mojdzuska E. The impact of new labelling
- 8 regulations on the use of voluntary nutrient-content and health claims by food
- 9 manufacturers. *J Pub Pol Marketing*. 2003;22;147-158.
- 10 24. LeGault L, Brandt M, McCabe N, Adler C, Brown A, and Brecher S. 2000-2001
- 11 Food label and package survey: an update on prevalence of nutrition labeling and
- 12 claims on processed, packaged foods. *J Am Diet Assoc*. 2004;104;952-958.
- 13 25. Byrd-Bredbenner C and Grasso D. The effects of food advertising policy on
- 14 televised nutrient content claims and health claims. *Family Econom Nutr Rev*.
- 15 2001;13;37-49.
- 16 26. Ippolito P and Pappalardo J. *Advertising nutrition & health. Evidence from food*
- 17 *advertising 1977-1997*. Washington, DC: Federal Trade Commission; 2002.
- 18 27. Mayer J, Maciel T, Orlaski P, and Flynn-Polan G. Misleading nutrition claims on
- 19 cracker packages prior to and following implementation of the Nutrition Labeling
- 20 and Education Act of 1990. *Am J Prev Med*. 1998;14;189-195.
- 21 28. National Institute of Nutrition. *Consumer awareness of and attitudes toward*
- 22 *functional foods*. Ottawa: National Institute of Nutrition; 2000.
- 23 29. National Institute of Nutrition. *Health Claims in Canada - Taking the Consumer*
- 24 *Pulse*. Ottawa: National Institute of Nutrition; 1999.
- 25 30. Worsley A. Which information do shoppers want on food labels? *Asia Pacific J*
- 26 *Clin Nutr*. 1996;5;70-78.
- 27 31. Bech-Larsen T and Grunert K. The perceived healthfulness of functional foods. A
- 28 conjoint study of Danish, Finnish and American consumers' perceptions of
- 29 functional foods. *Appetite*. 2003;40;9-14.
- 30 32. Shine A, O'Reilly S, and O'Sullivan A. Consumer use of nutrition labels. *Br Food*
- 31 *J*. 1999b;99;290-296.
- 32 33. Tessier S, Edwards C, and Morris S. Use and knowledge of food labels of
- 33 shoppers in a city with a high proportion of heart disease. *J Consum Stud Home*
- 34 *Econom*. 2000;24;35-40.
- 35 34. Urala N, Arvola A, and Lahteenmaki L. Strength of health-related claims and
- 36 their perceived advantage. *Int J Food Sci Tech*. 2003;38;815-826.
- 37 35. Food Standards Agency. *Consumer attitudes to food standards Wave 4*. London:
- 38 Food Standards Agency; 2004.
- 39 36. Fullmer S, Geigher C, and Parent C. Consumers' knowledge, understanding and
- 40 attitudes toward health claims on food labels. *J Am Diet Assoc*. 1991;91;166-171.
- 41 37. Consommation Logement et Cadre de Vie and Union Feminine Civique et
- 42 Sociale. *Les Allegations Nutritionnelles et les Allegations Sante*. Paris: CLCV and
- 43 UFCS; 2003.
- 44 38. National Institute of Nutrition. *Tracking Nutrition Trends V*. Ottawa: National
- 45 Institute of Nutrition; 2004.

- 1 39. Donovan Research. *Food Labelling Issues - Consumer Qualitative Research*.
2 Canberra: ANZFA; 2001.
- 3 40. Food Standards Australia New Zealand. *Food Labelling Issues: Quantitative*
4 *Research with Consumers. Evaluation Report Series No 4*. Canberra: FSANZ;
5 2003.
- 6 41. Nayga R. Determinants of consumers' use of nutritional information on food
7 packages. *J Agric Appl Econ*. 1996;28;303-312.
- 8 42. Health Canada. *Health claims focus testing*. Ottawa: A report prepared by
9 Goldfarb Consultants for Nutrition Evaluation Division, Food Directorate, Health
10 Canada; 2000.
- 11 43. Svederberg E. *Consumers' views regarding health claims on two food packages*.
12 Lund: Department of Education, Lund University (available at
13 www.pedagog.lu.se/forskning/skrifter/report21.pdf); 2002.
- 14 44. National Consumer Council. *Messages on Food. Consumers' use and*
15 *understanding of health claims on food packs (PD 09/D1/97)*. Available at
16 http://www.ncc.org.uk/pubs/pdf/messages_on_food.pdf. London; 1997.
- 17 45. Szykman L, Bloom P, and Levy A. A proposed model of the use of package
18 claims and nutrition labels. *J Pub Pol Marketing*. 1997;16;228-241.
- 19 46. Mason M and Scammon D. Health claims and disclaimers: extended boundaries
20 and research opportunities in consumer interpretation. *J Pub Pol Marketing*.
21 2000;19;144-150.
- 22 47. Bruhn C, Bruhn J, Cotter A, Garrett C, Klenk M, Powell C, Stanford G,
23 Steinbring Y, and West E. Consumer attitudes toward use of probiotic cultures. *J*
24 *Food Sci*. 2002;67;1969-1972.
- 25 48. Food Standards Agency. *Health claims on food packaging. Consumer-related*
26 *qualitative research*. London: Food Standards Agency; 2002.
- 27 49. Roe B, Levy A, and Derby B. The impact of health claims on consumer search
28 and product evaluation outcomes: results from FDA experimental data. *J Pub Pol*
29 *Marketing*. 1999;18;89-105.
- 30 50. Ford G, Hastak M, Mitra A, and Ringold D. Can consumers interpret nutrition
31 information in the presence of a health claim? A laboratory investigation. *J Pub*
32 *Pol Marketing*. 1996;15;16-27.
- 33 51. Mazis M and Raymond M. Consumer perceptions of health claims in
34 advertisements and on food labels. *J Consum Aff*. 1997;31;10-27.
- 35 52. Mitra A, Hastak M, Ford G, and Ringold D. Can the educationally disadvantaged
36 interpret the FDA-mandated nutrition facts panel in the presence of an implied
37 health claim? *J Pub Pol Marketing*. 1999;18;106-117.
- 38 53. Garretson J and Burton S. Effects of nutrition facts panel values, nutrition claims,
39 and health claims on consumer attitudes, perceptions of disease-related risks, and
40 trust. *J Pub Pol Marketing*. 2000;19;213-227.
- 41 54. Trolle E and Thorsen A. *Evaluation of health claims from a nutritional*
42 *perspective. TelmaNord 2001:537*. Copenhagen: Nordic Council of Ministers;
43 2001.
- 44 55. Kozup J, Creyer E, and Burton S. Making healthful food choices: the influence of
45 health claims and nutrition information on consumers' evaluations of packaged
46 food products and restaurant menu items. *J Marketing*. 2003;67;19-34.

- 1 56. Murphy D, Hoppcock T, and Rusk M, *Generic copy test of food health claims in*
2 *advertising*. <http://www.ftc.gov/os/1998/11/netfood.pdf>.
- 3 57. Wansink B, Sonka S, Morganosky M, and Hasler C, *How consumers interpret*
4 *two-sided claims*.
5 <http://www.consumerpsychology.net/insights/pdf/twosidedclaims.pdf>.
- 6 58. Wansink B. How do front and back package labels influence beliefs about health
7 claims? *J Consum Aff*. 2003;37;305-316.
- 8 59. McCullum C and Achterberg C. Food shopping and label use behavior among
9 high school-aged adolescents. *Adoles*. 1997;32;181-197.
- 10 60. Keller S, Landry M, Olson J, Velliquette A, Burton S, and Andrews J. The effects
11 of nutrition package claims, nutrition facts panels, and motivation to process
12 nutrition information on consumer product evaluations. *J Pub Pol Marketing*.
13 1997;16;256-269.
- 14 61. Maynard L and Franklin S. Functional foods as a value-added strategy: the
15 commercial potential of "cancer-fighting" dairy products. *Rev Agr Econ*.
16 2003;25;316-331.
- 17 62. Andrews J, Burton S, and Netemeyer R. Are some comparative nutrition claims
18 misleading? The role of nutrition knowledge, ad claim type and disclosure
19 conditions. *J Advert*. 2000;29;29-452.
- 20 63. Rayner M, Boaz A, and Higginson C. Consumer use of health-related
21 endorsements on food labels in the United Kingdom and Australia. *J Nutr Ed*.
22 2001;33;24-30.
- 23 64. Zarkin G, Dean N, Mauskopf J, and Williams R. Potential health benefits of
24 nutrition label changes. *Am J Public Health*. 1993;83;717-724.
- 25 65. Moorman C. A quasi experiment to assess the consumer and informational
26 determinants of nutrition information processing activities: the case of the
27 Nutrition Labeling and Education Act. *J Pub Pol Marketing*. 1996;15;28-44.
- 28 66. Paul G, Ink S, and Geiger C. The Quaker Oats health claim: a case study. *J*
29 *Nutraceut Func Med Foods*. 1999;1;5-32.
- 30 67. Marquart L, Weimer K, and Jacob B. Solid science and effective marketing of
31 health claims. *Nutr Today*. 2001;36;107-111.
- 32 68. Ippolito P and Mathios A. Health claims in food marketing: evidence on
33 knowledge and behavior in the cereal market. *J Pub Pol Marketing*. 1991;10;15-
34 32.
- 35 69. Silverglade B. The Nutrition Labeling and Education Act - progress to date and
36 challenges for the future. *J Pub Pol Marketing*. 1996;15;148-9.
- 37 70. Mathios A. The importance of nutrition labeling and health claim regulation on
38 product choice: an analysis of the cooking oils market. *Agric Res Econom Rev*.
39 1998;27;159-168.
- 40 71. Williams P, McHenery J, McMahon A, and Anderson H. Impact evaluation of a
41 folate education campaign with and without the use of a health claim. *Aust N Z J*
42 *Public Health*. 2001;25;396-404.
- 43 72. Watson M and Watson L. An evaluation of the impact of the folate and neural
44 tube defects health claim pilot. *Aust J Nutr Diet*. 2001;58;236-241.

- 1 73. Teisl M, Levy A, and Derby B. The effects of education and information sources
2 on consumer awareness of diet-disease relationships. *J Pub Pol Marketing*.
3 1999;18;197-207.
- 4 74. Kim S-Y, Nayga R, and Capps O. Food label use, self-selectivity, and diet quality.
5 *J Consum Aff*. 2001;35;346-363.
- 6 75. Nayga R. The impact of nutrition labels and health claims on consumers' diets. *Sci*
7 *Aliment*. 2002;22;507-514.
- 8