The glycemic index concept in action\textsuperscript{1–4}

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ABSTRACT

The glycemic concept is already being used as a means of differentiating products in the food industry. The aim of this summary is to show how the glycemic concept is being used by the food manufacturing industry, how it is perceived and understood by consumers, and how different countries rate its importance in terms of regulatory provision and consequent labeling implications. The use of the glycemic index (GI) is the most prominent form of labeling in the marketplace to date, and the use of GI symbol programs and other labeling initiatives are considered. The Australian market has been exposed to the GI phenomenon the longest, and consumer awareness in this market is very high. However, on a global scale, the picture is very different, and consumer awareness varies considerably. A broader view of how the global consumer uses nutritional labels is given. I also review how consumers are willing to adopt foods that offer health benefits in general and, more specifically, from the glycemic concept. I also summarize aspects to be addressed for consumers to benefit from the glycemic concept in action in the longer term. \textit{Am J Clin Nutr} 2008;87(suppl):244S–6S.

KEY WORDS  Glycemic concept, glycemic index, GI, consumer health, labeling

INTRODUCTION

The glycemic concept and the glycemic index (GI) are being used globally as a mark of product differentiation. It is true to say, however, that the Australian market has been exposed to the GI phenomenon the longest. Through the efforts of Professor Jennie Brand-Miller and the team at the University of Sydney, along with Diabetes Australia and the Juvenile Diabetes Research Foundation, consumers and health professionals are well informed about the concept, and we can learn much from their experience. On a global scale, the picture is very different. Before considering consumer understanding of GI and related concepts, it is important to gain a broader perspective on how consumers use nutritional labels and how they are willing to adopt foods offering health benefits.

USE OF FOOD LABELS BY THE GLOBAL CONSUMER

AC Nielsen \textsuperscript{(1)} conducted a global online consumer confidence survey with a total of 21,261 consumers in 38 countries between 11 April and 10 May 2005, with the following results:

Nutritional labels: how many people use them?

According to AC Nielsen \textsuperscript{(1)}, on a global basis, relatively few persons check a label all the time. A total of 21\% of respondents said they “always” check a nutritional label, although this varied greatly between countries. The biggest reason given for checking a label was, “When I’m thinking of buying a product for the first time,” a reason given by 41\% of respondents globally. Consequently, it is in the manufacturers’ best interest to help consumers interpret the information on food labels to ensure they find what they need.

Do consumers understand the nutritional label?

The United States led all nations, with 65\% of respondents claiming to “mostly” understand nutritional information on food packaging, although again there was wide variation between countries. The global average was 43\% of respondents. Manufacturers use food labels to differentiate their products and to enhance consumer trust, but this is a moot point if labels are not read. There is still some work to be done in getting consumers more involved in using product labels, including nutritional labels, to influence buying decisions.

Does mandatory labeling increase the use of nutritional information?

Of the 38 countries surveyed, 6 have some form of mandatory nutritional labeling (Canada, United States, Brazil, Australia, New Zealand, and Malaysia). The global average for “understanding” labels was 43\% of respondents. The scores for understanding in these 6 countries were higher than the average, except for Malaysia: Canada, 61\%; United States, 65\%; Brazil, 49\%; Australia, 55\%; New Zealand, 61\%; Malaysia, 22\%. The mandatory presence of nutritional labeling does not seem to lead to a greater frequency of use; respondents in the 6 countries were not significantly more likely to “always” check a label (except for Brazil at 52\% of respondents, all other countries were <29\% of respondents, and the global average was 21\% of all respondents). This suggests that the more consumers are exposed to nutritional labeling, the more educated they become.

What information are consumers seeking?

A global average indicates that fat, calories, and sugar are the items checked most often, GI is checked by 7\% of respondents as a global average. It is claimed that relatively few persons check the GI because very few companies are including the information

\textsuperscript{1} From Danisco Sweeteners Ltd, Surrey, United Kingdom.
\textsuperscript{2} Presented at an ILSI Europe workshop titled “Glycemic Response and Health,” held in Nice, France, on 6-8 December 2006.
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on product labels. Awareness of the GI was highest in Australia at 82% of all respondents. In this market, manufacturers are encouraged to list GI scores. Apart from this general encouragement from the food authority in the region, the Low GI Diet Revolution (2) is the best-selling diet book in this market, and there is a unique confluence of governmental labeling approval for food industry and marketing to a relatively homogeneous population in play. Europe and the United States continue to lag behind in these communications, because it is thought that consumers might be confused by products carrying messages surrounding blood sugar management (3).

A review of research on consumer response to nutrition information on food labels in Europe from 2003–2006 (4) also concluded that there is widespread interest for information on food packages, that consumers generally understand the link between food and health, and that many consumers are interested in using information about the nutritional properties of the food they eat. The degree of interest differs between consumers and varies across situations and products. However, it must be realized that understanding on-pack nutrition information in isolation is very different from understanding what this information means in the context of a weekly shopping excursion or composing a balanced diet, and this should form the basis of further consumer research.

Declarations of the positive sales impact from low-GI products abound (3). The outlook is driven by consumer awareness of the importance of blood sugar management (related to diabetes control), even though this conflicts with some views in the media. Extensive media coverage of GI and the proliferation of low-GI diet books has also helped to fuel consumer interest. Despite enthusiastic predictions that low GI will be a meaningful language to consumers, global differences do exist and it is recognized that as a communication tool, GI may have limitations. GI has been criticized as being overly technical and does not obviously translate into a consumer benefit or an understandable nutritional label. However, some of these perceived limitations have been overcome in many markets. Monro (5) introduced a concept of glycemic glucose equivalents (GGE) in an attempt to provide a more consumer-friendly label to try to address this particular issue. Certainly, it is not realistic for consumers to understand the many different terms associated with the glycemic properties of foods.

THE AUSTRALIAN EXPERIENCE

The GI Symbol Program is backed by the University of Sydney, Diabetes Australia, and the Juvenile Diabetes Research Foundation. The program provides a trusted signpost that the products have been tested properly for their GI and that they are lower in total fat, saturated fat, sodium, and energy and a good source of fiber, providing an overall healthy choice within their food category (6). Consumer studies conducted by Glycemix Index Ltd, Australia (7), have tracked consumer awareness and understanding of the GI Symbol Program since its launch in 2002. These studies have included telephone surveys between 2002–2004 and an online survey between 2005–2006. Five mainland capital cities were used for the survey, and the sample groups consisted of the main grocery buyers in the family who were over 18 y of age. In the 2005–2006 survey, more than 500 subjects were interviewed (250 male, 253 female).

The 2006 consumer study showed that 87% of respondents agreed that the GI symbol is a helpful shopping tool when looking for healthy food choices (7). A total of 60% of respondents were “very likely” or “somewhat likely” to use the symbol when shopping. There was some indication that consumers were likely to change to brands containing the logo, although this varied across age groups.

Unprompted questions (ie, questions for which respondents were not informed of the GI symbol program and its scope relative to improving health and nutrition) relating to awareness of nutrition claims on food labels indicated that a GI symbol or rating had a response from 25% of the respondents, which was behind “low fat” at 36% and “97% fat free” at 34% but was an increase over 15% in 2005. When prompted (opposite of unprompted, see above), 84% of the respondents were aware of the GI and 37% of the respondents were aware of the symbol. The use of the GI symbol in actual food selection was 54%. Low GI was considered by most to have perceived health benefits. A total of 45% of all respondents thought that the GI symbol was something to do with energy release, 30% thought that it was something to do with the method of testing or rating, and 24% thought that it was something to do with sugar metabolism.

Conclusions from this consumer study suggest that awareness and understanding of GI is continuing to increase and that the GI symbol is a credible signpost for healthier food choices. The GI Symbol Program has focused on adult women, who are the primary grocery buyers in this market, and this has reaped considerable rewards. The study shows that the symbol program would encourage more than one-half of the respondents to switch to brands carrying the GI symbol.

How does this translate into numbers of products in the market? Is the use of the symbol hampered by the strict nutritional requirements, and does this limit consumer choice? The number of products with the GI symbol in Australia is currently 110.

THE UK EXPERIENCE

Major supermarkets have recognized the popularity of low-GI diets and have responded to the increasing amounts of media and consumer exposure to the concept by using their own symbols on packaging and within the store. Some supermarkets have measured the GI of selected products. These products are already perceived as being healthy with low-fat contents and are often calorie counted. The supermarkets have used low and medium GI as a way of communicating a rating on packaging, rarely using high GI. They produce extensive nutritional information and supporting literature including in-store leaflets, websites, journal articles, GI diet advice, and plans. In addition to the use of low or medium GI values on packaging, a further explanation of the concept is often provided on the back of the package, either simply put as “Low to medium GI foods help you feel fuller for longer” or as a more complex message, including blood glucose curves and explanations of how GI is measured and how it relates to general health. Some attempt at differentiating between GI and glycemic load is made on a few products (8-11).

Consumer research by Dragon Brands (12) in 2004 used 2 focus groups of women aged 35-55 y, who according to the National Readership Survey (NRS Ltd) social grade definitions were B and C1 (middle and lower class) (13), to try to answer the question, “Glycemic index: another complicated word or the next big idea? What do consumers think?” The purpose of the research was as a reality check with consumers as to whether GI is on their personal agenda. What do consumers understand about
GI and what do they want to know? Should information about GI be communicated on the package, and if so, how? All subjects had families and an interest in a healthy diet.

The research found that the groups’ spontaneous associations with GI were rich and fairly accurate, including the following: “Glycaemic means sugar so GI is a sugar index,” “it’s about energy levels,” “the Australians have developed this,” “it’s not just for diabetics—also weight and general health,” “it’s really important for diabetics and for preventing diabetes,” “it’s about how quickly you digest things.” Their knowledge came from press articles including women’s magazines, TV and radio coverage, from relatives with diabetes, from visiting Australia, or from just talking to friends. Using GI as a marker appeared to have strong appeal with this group. They felt that the concept is in line with current concerns about trying to avoid highly processed and refined foods and focuses on satisfaction, energy, and minimizing hunger, which is relevant to the whole family as a general healthy eating approach. When asked on what sort of foods would GI information be helpful, their answers included everyday staples and snacks. They felt that it was not so relevant for treats, such as desserts, and that there was some confusion about what happens when foods are combined within a meal. When asked about what information and guidance is essential, they responded by suggesting that they do not want to have to struggle through lots of back-of-pack text and that there was no obvious demand for endorsement by official bodies, although a common rating system would be useful. The approach taken by a leading supermarket, Tesco, was welcomed by the group because the labels were simple and noticeable and a broad range of foods were covered by the GI label. The Tesco website was also considered as providing simple but helpful information (8).

THE SOUTH AFRICAN EXPERIENCE

The Glycemic Index Foundation of South Africa has developed a logo to reassure consumers and the food industry and to help to identify the GI rating of food products, distinguishing them from other seemingly similar products (14). “Frequent” and “Often” foods are used in conjunction with the Diabetes South Africa logo depending on the nature of the foods. Logos are only endorsed for lower fat products, independent of GI rating. A total of 36 products in the South African market currently contain the logo. On a global scale, manufacturers are using many on-package labeling strategies to draw consumers’ attention to the fact that their products have a low glycemic impact. Apart from straightforward GI numbers or ratings, the strategies include references to diet books; the use of branding, eg, “Dr GI”; and an indication that the products contain slow-energy-release carbohydrates, with phrases such as “slow carb” or “smart carb” often used.

In global terms, food labeling legislation has not caught up with the science or consumer demand in the area of glycemic control. Despite the legislative difficulties, the launch of products with a GI claim has increased yearly since 2003 (15). The total number of new products containing a GI claim launched globally since 2003 is 562 (15).

DISCUSSION

Many aspects of the glycemic response need to be addressed for consumers to benefit from the concept. What can we learn from the glycemic concept in action today is that food manufacturers are already using some form of glycemic labeling to differentiate their products. In GI-exposed markets such as Australia and the United Kingdom, consumer understanding and awareness is not a barrier to influencing buying decisions. However, food manufacturers may be cautious about further product development of the glycemic concept because of many factors, including the perception that 1) global legislative advice is inconsistent, 2) global labeling advice is inconsistent, 3) testing is expensive and testing facilities (commercial scale) are lacking, 4) a consensus scientific position concerning the glycemic index or carbohydrate management in healthy populations is lacking. In the post-Atkins era, food manufacturers are looking for sustainable health positioning, not fads. Improved satiety (related to GI) seems to be an approach that the industry favors currently and that they feel they can use with some confidence on packaging, eg, “slow carbs” or “helps you feel fuller longer.”

It seems that the motivation for interest in the glycemic concept for consumers goes beyond weight loss. It is considered to be more about the entire family eating healthily for improved longer-term health benefits, including reducing the risk of diabetes and heart disease, by cutting down on refined and highly processed foods. The implications for manufacturers and retailers from this summary are that simple, trustworthy, and consistent information and labeling systems are key to building consumer interest.

HM wrote the manuscript. The author was employed by Danisco Sweeteners Ltd at the time of writing.

REFERENCES