

# Developing the Consumer Interface for the MyPyramid Food Guidance System

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## ABSTRACT

**Objective:** To assess consumer response to potential graphics, slogans, and messages for the consumer interface of the MyPyramid Food Guidance System.

**Design:** Qualitative research conducted in two phases, composed of focus groups and Web-TV testing.

**Setting:** Professional market research facilities in Baltimore, MD, and Chicago, IL, and Web-TV.

**Participants:** Phase 1, 77 adults in 10 groups; Phase 2, 407 adults via Web-TV.

**Phenomenon of Interest:** Consumer response to potential graphic images, slogans, and messages for the Food Guidance System.

**Analysis:** A content analysis was used to summarize comments from focus groups and Web-TV tests into meaningful themes. Frequencies were calculated for responses.

**Results:** Respondents preferred the familiarity of the pyramid shape and found graphics and slogans that were personal, active, and positive to be appealing.

**Conclusions and Implications:** The consumer interface for the MyPyramid Food Guidance System was shaped by consumer feedback that identified appealing and useful elements and avoided elements that were potentially confusing or less meaningful. Consumers preferred images and messages that were perceived as new, personal, and active, but they desired some continuity with the original Pyramid shape.

**Key Words:** MyPyramid, dietary guidance, consumer research, qualitative research

(*J Nutr Educ Behav.* 2006;38:S124-S135)

## INTRODUCTION

For the development of the original (1992) Food Guide Pyramid (Pyramid), extensive technical and consumer research was conducted. The food intake patterns that eventually were illustrated by the Pyramid graphic were developed in the mid 1980s through a research process that has been well documented.<sup>1,2</sup> The first graphic presentation of these new food intake patterns was as a Food Wheel that was part of a joint American Red Cross-USDA nutrition course in 1984.<sup>3</sup> Later the food intake patterns were presented in tabular form as “A Pattern for Daily Food

Choices” in USDA publications that focused on how to use the *Dietary Guidelines for Americans*.<sup>2</sup> From a qualitative study of the Food Wheel presentation of these new food intake patterns, Shepherd et al<sup>4</sup> identified that consumers did not see the food guide as new, but rather as a new illustration of the Basic Four. They also did not notice the messages on moderation of fat and added sugars.

In the late 1980s, USDA determined that a new graphic presentation of the food guide was needed to bring it to the attention of consumers and focus on the key messages of variety, proportion, and moderation.<sup>2</sup> Several potential graphic concepts were designed and tested with consumers. The Pyramid design, which incorporated the 3 key messages, emerged through this study. The prototype Pyramid graphic was then tested, with explanatory text as well as alone, for its ability to communicate these key messages.<sup>2</sup> Consumers appeared to understand these important messages, and the brochure text was helpful in explaining additional messages, such as the symbols for fats and sugars that were “sprinkled” throughout the graphic. The graphic itself was the subject of additional rounds of consumer

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PUBLISHED BY ELSEVIER INC. ON BEHALF OF THE SOCIETY FOR NUTRITION EDUCATION

doi: 10.1016/j.jneb.2006.08.002

testing, to ensure that specific audiences—children and low-literate and low-income adults—could understand and relate to its messages. In this additional research, the Pyramid was found to be the most effective graphic image for communicating the key messages of variety, proportionality, and moderation. However, results of the testing suggested that the Pyramid was more fully understood when supported by explanatory materials. In use of the original Pyramid, this support has generally been present when it was used as part of a nutrition education program. However, there has also been widespread use of the graphic alone—on food packages and as a poster. In fact, the original Food Guide Pyramid became one of the most recognized, used, and influential food guides in history.<sup>5,6</sup>

In 2001, the USDA Center for Nutrition Policy and Promotion initiated a broad-based reassessment and revision of the original Pyramid, prompted by the new body of science-based information about nutrition, health, diet, and consumption patterns that had been generated during the 1990s.<sup>7</sup> The technical research that was undertaken and that resulted in the revision of the Pyramid's food intake patterns is detailed in accompanying articles.<sup>8,9</sup> In addition, research to explore consumer understanding and use of the original Pyramid and to assess how consumers perceived and understood potential new concepts and messages for a food guide is also detailed in an accompanying article.<sup>10</sup> An overall communications plan for the consumer interface of a new Food Guidance System was outlined in a July 2004 *Federal Register* notice.<sup>11</sup> Over 400 comments were received, and these comments helped inform the research for development of the Food Guidance System. This article presents the methods and results for several phases of qualitative research that were conducted to develop a new graphic design, slogan, and major messages for the MyPyramid Food Guidance System.

## METHODS

### Selection of Target Audience

The target audience for the initial release of the MyPyramid Food Guidance System, and therefore for respondents for these studies, was determined using several strands of information. One source of information was existing data from Porter Novelli's 2004 *ConsumerStyles* survey database (N=6207).<sup>12</sup> This database was stratified by region, household income, population density, age, and household size in order to create a nationally representative sample. A low-income/minority supplement was used to ensure adequate representation of these groups. Data from the *ConsumerStyles* survey were weighted to match the U.S. population.

Interest in nutrition was determined to be a key factor, because initial target audiences needed to be at least somewhat inclined to pay attention to food guidance messages and materials in order for these design concepts to have their desired impact. The *ConsumerStyles* survey suggested that about 70% of the population expressed some interest

in nutrition, based on their agreement with one or more statements. These statements were used for selection of study participants. Also, the *ConsumerStyles* survey data revealed that American adults who were either overweight or of healthy weight were more likely than obese adults to display an interest in nutrition.

In addition, Internet use was viewed to be an important criterion, as well. The 2004 *ConsumerStyles* database revealed that the Internet was the top media source for health and nutrition information, and usage for this purpose did not vary greatly between lower-income consumers and the adult U.S. population at large. According to these data,

- 40% of low-income women aged 20 to 40 years use the Internet for health information daily to monthly, and
- 51% of low-income women aged 20 to 40 years turn most often to the Internet, compared with 47% of all U.S. adults.

Given this information, the widespread availability of the Internet in homes and through schools and public libraries, and the Internet's ability to deliver quantities of information efficiently and to personalize the information delivered, it was decided to use the Internet as a primary dissemination tool. Therefore, those who use the Internet to find health information were included in the initial target for Food Guidance System messaging.

### Phases of Research

The first phase of this research, conducted in October 2004, assessed consumers' reactions to graphic concepts designed to replace or update the Food Guide Pyramid. Specifically, study respondents reviewed the concepts and ranked them on 2 primary criteria: overall appeal and the concepts' ability to encourage participants to seek additional information about nutrition. Respondents also evaluated potential slogans designed to accompany the concepts. The second phase of the research, which was conducted in December 2004 and February 2005, built upon findings from the first phase. In this phase, 2 Web-TV tests examined respondent reactions to revised graphic executions and slogans, and assessed how consumers comprehended and could potentially operationalize nutrition messages associated with the new Food Guidance System. Additional research, conducted in February 2005, examined the usability of a prototype of the MyPyramid.gov Web site, which was designed to clearly communicate and personalize Food Guidance System information via the Internet. The usability research is briefly described in an accompanying article.<sup>13</sup>

All phases of research were conducted under contract for USDA by Porter Novelli, a communications firm with expertise in social marketing. All research materials used in each phase were approved by the Federal Office of Management and Budget for compliance with regulations based on the Paperwork Reduction Act of 1995.

## Phase I

**Study design.** To obtain insight into consumers' opinions and beliefs regarding graphic concepts for a symbol and slogans, Phase I employed focus group interviews (focus groups), a qualitative research method that has been widely used in nutrition education research.<sup>14</sup> For this phase of research, 10 focus groups were conducted, all in the evening hours. Six focus groups were held in Baltimore, MD, and the remaining 4 groups were held in Chicago, IL. All focus groups employed a formative evaluation methodology. This methodology has received considerable review and has been found to be primarily helpful with concept development since it encompasses design, evaluation, and revision.<sup>15</sup> The services of market research firms in each focus group location were used for their facilities and participant recruitment capabilities.

Professional moderators conducted the focus groups using a prepared moderator's guide to direct discussion around topics of interest. All group interviews were 2 hours in length and were audiotaped and videotaped. The specific topics for these groups, which served as the basis for development of the moderator's guide, are outlined in Table 1.

Initially, graphic artists were tasked to create concepts that could potentially become the new icon for the USDA Food Guidance System. To draw consumer attention to the new Food Guidance System, an icon that was clearly different from the original Pyramid was desired. USDA provided some criteria to which the new icon needed to adhere. Specifically, all graphic concepts needed to be simple and easy to interpret, appealing or engaging, and personal (so that consumers could relate to the symbol); include the ability to provide additional information (be educational); convey a sense of trust; and have the ability to be translated to a children's version without major refinement. Artists were not given specifications of color or shape. With this information, artists developed a series of

**Table 1.** Topics for Phase I Focus Group Discussions

- Consumer acknowledgment of healthy eating messages in the media<sup>a</sup>
- Consumer assessment of graphic concepts in terms of overall appeal
- Consumer assessment of graphic concepts in terms of which graphics would be the most effective at reminding respondents to eat healthier and encouraging respondents to look for more information
- Overall discussion of graphic preferences on both scales
- Consumer assessment of slogans in terms of how well they motivate respondents to think about their personal food choices
- Upon what sources respondents rely to obtain information about nutrition and physical activity<sup>a</sup>

<sup>a</sup>Topics that were discussed in the focus groups but are not included in this report

concepts for testing. The concepts fell into 1 of 3 categories: Pyramid-based (concepts that were most similar to the original Food Guide Pyramid's shape), Pyramid-influenced (concepts that resembled a pyramidal shape), and nonpyramidal (concepts that departed from the pyramidal shape).

Graphic concepts were evaluated in the following manner. A total of 10 concepts were tested in each focus group. The categories and their corresponding icons are presented in Figure 1. Given the formative evaluation methodology, some of the concepts were modified based on focus group results from the first few nights of research. Modifications that impacted the concept development process are presented in Figure 2. Focus group respondents were given an envelope holding 10 cards. Each card was marked with a capital letter in the upper right-hand corner and depicted 1 of the 10 graphics to be tested. The contents of each envelope were randomized to reduce the possibility of order bias.

Participants were asked to sort the graphics twice during the focus groups. Using a worksheet, respondents first ordered the graphics from the one that was most appealing and attention-getting to the one that was least appealing and attention-getting. The moderator then asked respondents to explain their preferences.

The moderator then presented examples of how a logo could be used to convey information about nutrition and health—a sample poster and a computer animation. Both the poster and the computer animation illustrated how a logo could be used to remind individuals to eat more healthfully and to encourage them to look for more information. This presentation was intended to provide respondents with a context for evaluating sample graphics that would be used in a similar fashion as part of educational materials. Neither the poster nor the computer animation included any of the graphic concepts that were used in the testing. After seeing these examples, participants again sorted their cards, from the graphic that would be most effective at reminding them to eat more healthfully and encouraging them to look for more information at the top, to the one that would be least so. Again, respondents discussed their preferences.

A worksheet exercise was conducted for slogans, as well. Respondents received an envelope holding 11 cards, one for each slogan. (Table 2 lists all tested slogans in this phase of research.) As with the graphic sorting exercises, envelope contents were randomized to reduce the possibility of order bias. Participants then ranked slogans in order of how effectively the slogans motivated them to think about their food choices and find more information about nutrition. They then discussed their preferences with the group.

**Participants.** The participants consisted of adult consumers in 2 cities: Baltimore, MD, and Chicago, IL. A professional market research firm in each city recruited and selected a total of 77 participants for the study, using the firm's own databases. Participants for the groups were screened and recruited by a professional recruiting facility.

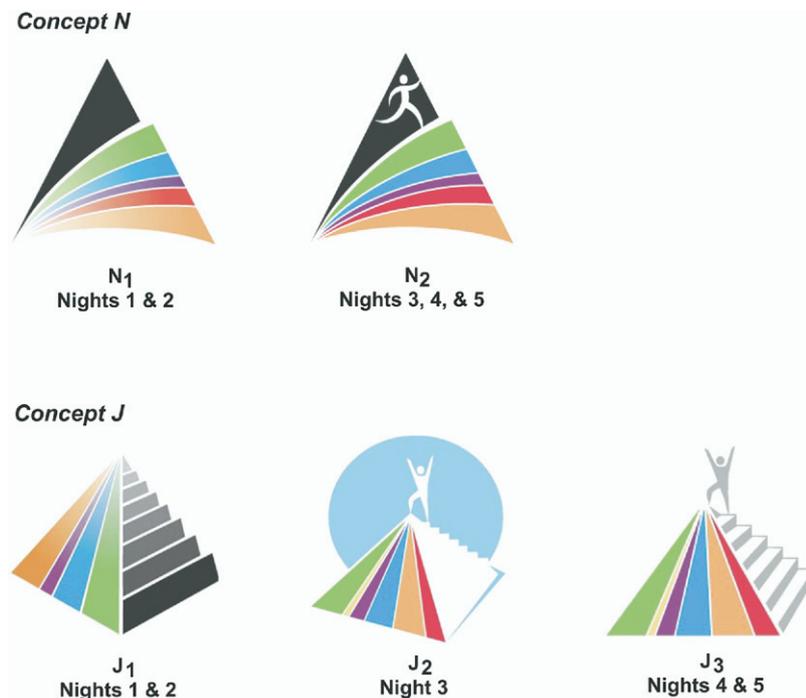
**Pyramid-Based****Concept U****Concept I****Concept H****Concept J****Pyramid-Influenced****Concept N****Concept L****Concept O****Non-Pyramidal****Concept W****Concept Y****Concept Z****Figure 1.** Graphic Concepts Tested in Phase I Focus Groups

All participants indicated an interest in nutrition, identified by strong agreement or agreement to one of the following statements: “Having healthy eating habits is very important to me” or “I am actively trying to eat a healthy diet.” In addition, no respondents considered themselves experts in nutrition. Participants were also asked to self-report their height and weight, and recruiters calculated corresponding Body Mass Index (BMI) scores. Respondents who were considered at a healthy weight (BMI = 19.0-24.9) or overweight (BMI = 25.0-29.9) were recruited for the groups.

Groups were stratified by age, gender, Internet usage, and BMI score. Participants fell into one of two different age categories: 21 to 40 years of age (younger) and 41 to 60 years of age (older). Groups of Internet users included respondents who indicated they use the Internet to look for health information at least a few times a year (“Users”). Nonusers rarely or never use the Internet for this purpose (“Nonusers”). In addition, participants represented a mix of education level, marital status, and household income. Other exclusion criteria included the following:

- Neither the respondents nor their household members were employed in the marketing research, advertising, public relations, media, health care, nutrition, fitness, or pharmaceutical industries.
- None had participated in a market research focus group during the past 6 months.
- Respondents were not on a medically prescribed diet.

Overall, 6 groups were conducted among females—2 with healthy-weight “Users,” 2 with overweight “Users,” and 2 with “Nonusers,” including both healthy-weight and overweight participants. Four male groups were held with the following specifications: 2 groups with “Users,” and 2 groups with “Nonusers.” All 4 groups of males included a mix of healthy-weight and overweight individuals. All groups were composed of either younger or older participants. The groups were segmented to reduce disparity among participants that could potentially hinder open group discussion. More groups were conducted with women than men because women are more likely than men to be primary shoppers and receptive to health-related and food-



**Figure 2.** Modifications Made to Graphic Concepts During Phase I Focus Group Testing

related messages.<sup>12</sup> More groups were conducted among those who search for health information on the Internet because logos and slogans were tested, in part, on their ability to encourage individuals to search for more information on the Web.

**Analysis.** All of the focus group sessions were audiotaped and videotaped, and the audiotapes were transcribed by an independent professional transcription service. Because a formative evaluation methodology was used, it was necessary to review findings after each evening of research. Therefore, individuals took notes during sessions to help summarize nightly findings. In addition, respondents participated in nu-

merous worksheet exercises to document their preferences for graphic concepts and slogans. The worksheet summaries, notes, and transcripts served as the primary data sets for the study, supplemented by audiotapes and videotapes.

Content analysis was used to analyze the focus group findings.<sup>16-17</sup> Transcripts and notes were read to become familiar with the range of comments and to begin the process of identifying recurring comments. Analysis of these materials identified potential themes. Comments were then assigned to these themes to identify the most common categories. The range and diversity of perceptions were also identified.

Analysis of the worksheet exercises included the calculation of mean rankings for each exercise per interview session and for the sessions overall. For each worksheet, the top-rated graphic or slogan received a score of 1. The second-rated graphic or slogan received a score of 2, and so on, to the lowest-rated graphic or slogan, which received the lowest score—10 for graphics and 11 for slogans. Given this scoring system, the highest-rated graphics and slogans received the lowest mean scores.

Although some differences were noted in response between the various groups of participants, such as between men and women or between older and younger adults, the commonalities among groups overshadowed the differences. Therefore, the results presented here focus on reactions, beliefs, and attitudes that were common across all groups. Where clear differences existed in the responses of one category of participant, they are noted as such in the results. The information and quotes presented in the results section reflect themes most often mentioned by participants across several or many of the focus groups.

**Table 2.** Potential Slogans Tested with Consumers During Phase I Focus Groups

Reference code letter	Slogan
c	One pyramid. Many sides.
e	Your foods. Your moves. Your pyramid.
g	Your foods. Your moves. Your way.
k	Eat healthier. Move more. Feel better.
m	Help yourself to healthier.
p	Find your balance.
r	Balance is beautiful.
s	Shape your day.
t	Food & You. What to do.
v	Teach me to eat.
x	Eat Smart. Play Hard.

## Phase II

**Study design.** This phase of research employed two Web-TV tests to build upon findings from Phase I and to examine reaction to Food Guidance System nutrition messages. Questionnaires for each Web-TV test were prepared to cover specific topics of interest (see Table 3). Each Web-TV survey relied on consumer panels recruited by a vendor that supplied the participants with Internet access.

The Web-TV test methodology allows respondents to review information via the Internet from home and evaluate the information using a questionnaire. It includes both closed-ended and open-ended questions to allow respondents both to identify preferences and then to explain them within the context of the tests. Given this ability to connect explanatory comments with preferences, the Web-TV tests represented additional steps in the formative research process. Thus, all results were considered qualitative. Closed-ended items that specifically addressed graphics or slogans and their corresponding answer choices were rotated to reduce the possibility of order bias.

The first Web test, conducted in December 2004, presented respondents with 4 potential Food Guidance System graphics and 7 potential slogans, which had been revised or developed based on findings from Phase I, and nutrition message sets for 5 food groups. The second Web test, which

employed the same methodology, was conducted in February 2005 and provided a final exploration of 2 potential graphic concepts for a Food Guidance System symbol.

**Participants.** Each Web-TV survey relied on a vendor with a panel of 50,000 people who obtain Internet access via Web-TV technology. To obtain its panel, the Web-TV test vendor identified potential panel members using a random-digit dial methodology. The vendor then contacted interested parties to offer free Web services and training in exchange for a 3-year commitment to participate in Web-based surveys. Thus, the panel does not have a pro-technology bias that is often encountered with Web samples. The panel resembles the U.S. population when compared to U.S. Census data and is constantly replenished, so that members are not overburdened with surveys. Each panel member receives approximately 3 surveys a month.

The participants for Phase II of the study consisted of 407 respondents—200 participated in the first Web-TV test; 207 participated in the second. For each test, adults 18 years of age and older were sent the Web-based survey via e-mail. To test all materials, files containing the graphics and slogans were placed within the surveys themselves—participants viewed each one and were then asked to answer several questions giving their opinions about them.

**Table 3.** Topics for Phase II Web-TV Tests

### December 2004 Web-TV test topics:

- Degree to which consumers actively eat a healthful diet and indicate that having healthful eating habits is important to them<sup>a</sup>
- Consumer assessment of graphic concepts
- Consumer assessment of slogans
- Consumer determination of which graphic concept would work best as the new national symbol for healthful eating and physical activity
- Consumer determination of which slogan best reminds them to eat healthfully and be physically active
- Consumer assessment of food group titles and supporting messages
- Demographic information

### February 2005 Web-TV test topics:

- Degree to which consumers actively eat a healthful diet and indicate that having healthful eating habits is important to them<sup>a</sup>
- Consumer assessment of graphic concepts
- Consumer assessment of figures included in concepts<sup>a</sup>
- Consumer determination of which graphic concept would work best as the new national symbol for healthful eating and physical activity
- Demographic information

<sup>a</sup>Topics that were included in the Web test but are not included in this report

**Analysis.** Given that both Web-TV tests included closed-ended and open-ended questions, multiple tools aided analysis. Standard frequencies were calculated for all closed-ended questions, but significance testing was not conducted on the results. Content analysis was used to analyze responses to the open-ended questions. Verbatim responses were reviewed and sorted to identify replicated responses and recurring themes. Potential themes were generated from this review. These themes received labels that effectively summarized their contents.

## RESULTS

### Sample Demographics

**Phase I.** Altogether, 77 individuals participated in the Phase I focus groups, 47 in Baltimore and 30 in Chicago. These cities were selected to provide some geographic diversity in the research population, and because market research firms were available in these cities with access to databases from which a diverse sample of respondents could be recruited. Overall, the focus groups consisted of a diverse group of participants in terms of their gender, age, marital status, education level, income, race, and ethnicity.

**Phase II.** In total, 407 individuals completed the Web-TV tests: 200 in the first test (December 2004) and 207 in the second (February 2005). The participants for each test represented a mix of gender, age, education level,

household income, marital status, race, and ethnicity. Table 4 illustrates the specific characteristics of participants for each test.

**Findings from the Phase I Focus Groups**  
**Assessment of graphics—overarching themes.**

Several common themes emerged when participants explained their preferences of Food Guidance System graphics. First, many respondents identified with concepts that conveyed success and achievement. They appreciated the positive feelings these graphics connoted, especially since these graphics are intended to help individuals make the right nutrition and health decisions. This positive theme was also echoed during the discussion of slogans. Participants interpreted these impressions primarily from graphics J<sub>2</sub>, J<sub>3</sub>, U, and N<sub>2</sub> (Figures 1 and 2), each of which depicted characters moving toward or on top of their pyramids.

(Discussing J<sub>3</sub>) “I liked it because it looks like they actually made their goals. They succeeded.” – Female, Chicago

(Discussing N<sub>2</sub>) “I like the concept of the pyramid. The individual that is in essence running to the top of the pyramid. When you stay on top of nutrition, [you] stay healthy.” – Male, Chicago

(Discussing U) “The figure is on top. That’s where you want to be.” – Male, Baltimore

Respondents also lauded concepts that were “personal.” These concepts communicated predominantly warm and positive thoughts or feelings to which the respondents could relate. Although all of these “personal” concepts had human figures, the interpretation of these concepts varied to a degree. Some participants had a simple definition for

concepts to which they could relate. To these individuals, the inclusion of a human figure or form made the graphic familiar.

(Discussing J<sub>3</sub>) “The man at the top. The image of a human being succeeding. It caught my attention.” – Female, Chicago

(Discussing U) “I gravitated to one with [a] figure because [I] can identify with it.” – Female, Baltimore

(Discussing Y) “You are in control. Everything is in your hands to eat healthier.” – Male, Baltimore

Several participants also gravitated toward graphics that depicted motion and activity over those that were stagnant. Specifically, participants cited the movement as reasons why they selected them among their most appealing.

(Discussing N<sub>2</sub>) “It’s got a lot of movement; it looks like he’s running up, and the curves of the rainbow catch your eye.” – Male, Chicago

(Discussing J<sub>3</sub>) “I liked it, because the person is walking up the stairs, walking towards something.” – Female, Chicago

(Discussing W) “It’s got a person in it, but the person is in motion. [It] symbolizes life everyday, life is in motion. Our lives are in motion.” – Female, Baltimore

Focus group respondents also noted that graphics with distinct areas or clear separations between sections would better lend themselves to conveying additional information. When discussing their reasoning behind which graphics most and least encouraged them to look for more information, they often imagined each graphic in a Web setting. As a result, graphics like Y, with its separate circles, or W, with its distinct sections, would be easier to “click on” than concept Z, which has less clearly defined areas.

(Discussing W) “You can see what you want to click on. That would get your attention.” – Female, Baltimore

**Table 4.** Demographic and Socioeconomic Characteristics of Phase II Web-TV Test Participants

Characteristics	Dec 2004 Test N=200 Number (Percentage)	Feb 2005 Test N=207 Number (Percentage)
<b>Gender</b>	Male	96 (48%)
	Female	104 (52%)
<b>Age</b>	Under 41	61 (31%)
	41 and over	139 (69%)
<b>Marital Status</b>	Married	116 (58%)
	Not married	84 (42%)
<b>Ethnicity</b>	Caucasian	138 (69%)
	African American	28 (14%)
	Hispanic	18 (9%)
	Other	16 (8%)
<b>Employment Status</b>	Currently employed	122 (61%)
	Not currently employed	78 (39%)
<b>Education</b>	High school graduate or less	98 (49%)
	Some college	56 (28%)
	College degree or higher	46 (23%)
<b>Family Income</b>	Under \$25,000	64 (32%)
	\$25-49,999	70 (35%)
	\$50,000 and above	66 (33%)

(Discussing Y) “When I was doing this list, I had animation on my mind. I personally don’t like the logo, but could see it being more user-friendly on a Web page.” – Male, Chicago

(Discussing Z) “I look at that and say, it would be hard to get information out of that...Where do you start? Where do you click?” – Female, Baltimore

**Concept refinements.** As explained above, findings from the first few nights of focus groups were used to refine concepts for subsequent testing in remaining focus groups. Concepts that received such refinements included concepts J and N (see Figure 2).

Respondents from nights 1 and 2 reacted positively to the feeling of motion that N<sub>1</sub> conveyed, but they were less positive about the grading of the colors. They equated the fading colors with weakness. As a result, the grading was replaced with solid colors for all concepts that contained grading. In addition, there was no “personal” connection to N<sub>1</sub>. After the inclusion of the figure moving within the pyramid, respondents more easily interpreted both physical activity (“the figure is running to the top”) and success and achievement.

Concept J received 2 modifications over the course of the groups. As was done for concept N<sub>2</sub>, J<sub>1</sub>’s gradient shading was replaced with solid colors, and a figure was placed at the pyramid’s summit. As a result, respondents from evening 3 of focus groups reported that the graphic triggered feelings of accomplishment and success.

Despite these improvements, respondents continued to have difficulty with the physical activity side of the pyramid, with some respondents specifically objecting to the silhouetted approach to the steps. To address these comments, Concept J<sub>3</sub> was developed with a more detailed staircase. After this change, respondents made the connection between physical activity and healthful eating, in addition to interpreting success and achievement.

**Ranking of graphics.** Each concept’s position relative to the other concepts was reviewed for each evening of focus groups. This analysis was conducted for each sorting exercise to determine if a top tier of concepts could be identified. Rankings varied, but there was general agreement from group to group revealing a subset of graphics that consistently placed in the top tier of both sorting exercises—J, N, U, W, and Y.

**Assessment of slogans—overarching themes.** Although the slogans used the printed word as opposed to a picture, respondents lauded some themes in the slogans (see Table 2) that paralleled some of the preferred elements identified while evaluating the graphics. For example, respondents praised statements that were “positive.” These “positive” messages were inspiring and connoted that participants could reach their goal.

(Discussing k) “As I’m getting older, it is a goal to want to feel good.” – Female, Baltimore

(Discussing x) “You’re more active. That invites you to improve what you’re doing.” – Male, Chicago

Participants also preferred slogans that were simple, direct, and comprehensive. They did not want to have to infer too much from the statement.

(Discussing k) “It’s a quick message. Simple. Makes sense.” – Female, Chicago

(Discussing r) “If you weren’t educated, you might not know [what that means].” – Male, Baltimore

In the icon tests, participants gravitated toward graphics to which they could relate. They repeated this tendency with slogans; however, the tendency manifested itself in a slightly different way. Respondents looked for ways they could individualize a slogan’s message. As a result, they focused on statements that included the word “you.” This feeling of *you-ness* enabled respondents to imagine applying a message to their specific situations. For example,

(Discussing p) “Everyone is different, it’s what you need to fit. It’s the ownership...the ‘your.’” – Female, Baltimore

(Discussing e) “It’s your move to make the decision. You take control.” – Male, Baltimore

Respondents also warned against slogans that were “preachy” or told them what to do. These individuals did not want to be patronized, and comments, as well as the results from the sorting exercise, reflected these sentiments.

(Discussing t) “I like ‘food and you,’ but I don’t like ‘what to do.’ I don’t want someone telling me what to do.” – Female, Baltimore

(Discussing v) “Feels like it is for a younger person. Normally you teach a younger person how to do things.” – Male, Baltimore

**Ranking of slogans.** As explained above, in addition to evaluating group discussion about each slogan, each slogan’s position relative to the other concepts was reviewed for each evening of focus groups. This analysis provided additional evidence of elements participants found most appealing and identified 3 slogans that consistently rated in the top tier—k, x, and p (see Table 2). These slogans most effectively employed the aforementioned motivational themes.

## Findings from Phase II Web-TV Tests— Graphic Concepts

**December 2004 Web-TV test.** Test participants evaluated 4 graphic concepts on a variety of measures (see Figure 3). Initially, respondents were shown each concept, one at a time, and asked to assess how much it appeals to them or interests them. Approximately 1 in 5 respondents indicated that concepts N (21%), W (21%), and J (17%) had high initial appeal (a response of 4 or 5 on a 5-point scale), followed by concept B (12% high appeal). Over half of all participants indicated each symbol had at least medium appeal (a response of 3, 4, or 5 on a 5-point scale). Concept N was rated with at least medium appeal by 59%



Figure 3. Graphic Concepts Tested During First Round of Web-TV Testing

of participants, concept J by 56%, concept B by 53%, and concept W by 52%.

Respondents then read information explaining that each of the tested concepts includes a variety of colors and that each color represents a different food group. They were also informed that each symbol includes an element of physical activity.

Survey respondents were subsequently shown all 4 graphic concepts simultaneously and asked the following question: “Overall, which symbol do you think would work best as a national symbol for healthy eating and physical activity?” Forty-one percent selected concept J. Concepts W and N were selected by 23% and 21% of respondents, respectively, and 14% of respondents selected concept B.

After commenting on their preference, participants were reminded that 1 of these 4 symbols would take the place of the current Food Guide Pyramid. All respondents were presented the following information:

“The original Food Guide Pyramid provided healthy eating information within the symbol. However, the purpose of the new symbol is to remind you to eat healthy and be physically active, and show you where to look for more personalized information.”

The information was presented to provide additional context for their responses. Respondents were then shown the graphic concepts a final time and asked, “With this in mind, which symbol do you think would work best as the new national symbol for healthy eating and physical activity?”

Respondents again preferred concept J (43%) over the other concepts (N: 22%; W: 20%; B: 15%). Answers to open-ended questions revealed that participants who pre-

ferred concept J to the others reacted positively to the physical activity connoted by the staircase. Many indicated that the inclusion of the staircase enables the symbol to communicate clearly the importance of balancing healthful eating and exercise. Some respondents also noted that they relate to the figure and posited that they, like the figure on the symbol, could reach their nutritional goals if they ate healthfully and exercised. Given these results, concept J was selected for further testing.

**February 2005 Web-TV test.** For this second Web test, the primary elements of J (food pyramid, staircase, and figure) were refined to give respondents the option between 2 symbols that were similar in concept but executed differently. The new execution, which included a revamped staircase and a new figure, was labeled concept D (see Figure 4). Concept J from the previous Web test was included, with minor refinements: its pyramidal base was widened to better illustrate proportionality, and the figure was placed slightly lower on the staircase to indicate the figure was at the beginning of his/her climb. In addition, the order of the colors was rearranged for artistic appeal.

As in the initial Web test, respondents were first asked to assess the overall appeal of each symbol. Twenty-one percent of participants gave concept J a high-appeal rating, and 64% gave it at least a medium-appeal rating. (High appeal refers to a response of 4 or 5 on a 5-point scale, and at least medium appeal to a response of 3, 4, or 5 on a 5-point scale.) Concept D received 17% high appeal and 60% medium appeal.

These participants were given the same information about the symbol’s intended purpose as in the previous Web test and asked, “With this in mind, which symbol do you think would work best as the new national symbol for healthy eating and physical activity?” Sixty-one percent of respondents selected symbol J. The remaining 39% preferred symbol D.

A number of respondents who selected symbol J indicated that it was easier to interpret than the redesigned execution. To them, it better conveyed the message of physical activity and healthful eating. Several respondents compared specific elements of each symbol, as well. Respondents offered positive reactions to figures depicted in both symbols. Although some respondents praised the figure in symbol D for its energy and movement, others



Figure 4. Graphic Concepts Tested During Second Round of Web-TV Testing

connoted strength and health from the stature of symbol J's figure.

Participants also compared the staircases in each symbol. They noted that they preferred the stairs in symbol J to those in symbol D because there are fewer of them and thus "would be easier to climb." A few other participants commented that the lighter shading of the stairs (in symbol J) makes it seem easier to reach the top, and this factor, coupled with the boldness of the figure, places the emphasis on the person, not on the climb.

### Findings from Phase II Web-TV tests—slogans.

During the first Web-TV test, survey participants evaluated 7 potential Food Guidance System slogans. These slogans were developed based on findings from Phase I focus groups. Specifically, they incorporated varying degrees of the motivational themes Phase I respondents emphasized, such as "you"-ness, a "positive" tone, and direct, clear delivery. Table 5 lists the slogans tested in Phase II. Respondents reviewed each slogan in the context of a graphic concept and rated the slogans' appeal on a 5-point scale. Two slogans were presented with each graphic concept. As with the concepts, the order in which the slogans were presented was rotated to reduce the possibility of order bias. They were also asked to provide open-ended explanations of their preferences. Later in the survey, respondents were shown all of the slogans and asked to select the one that best reminded them to eat healthfully and be physically active.

Overall, almost half of respondents (49%) gave "Steps to a healthier you" (shown with concept J) a high-appeal rating (see Table 5). Results for other slogans included "Eat smart. Move more. Feel great" (29% high appeal, shown with concept N), "Eat smart, be active, America" (26% high appeal, shown with concept J), "Find your balance" (22% high appeal, shown with concept W), and "Be your healthy best" (21% high appeal, shown with both concept B and concept N). Respondents relegated the "Your foods..." slogans to a bottom tier on this appeal measure.

When asked, "Which slogan best reminds you to eat healthy and be physically active," over one-quarter (27%) of survey participants selected "Steps to a healthier you" over the other 6 presented in testing (see Table 5). Results

from all measures and open-ended commentary were reviewed to determine if a top tier of slogans could be identified. Consistently high scores on survey items (compared to other slogans) and evidence that respondents were able to connect the slogans to health and nutrition placed "Steps to a healthier you," "Eat smart. Move more. Feel great," and "Eat smart, be active, America" in this top tier.

Respondents who selected "Steps to a healthier you" gravitated to that slogan for 3 primary reasons. First, many respondents indicated that it complimented concept J because of its staircase. Second, participants indicated that the slogan reinforced the idea that better health is attained in incremental steps and was something for them to work to achieve. Third, some lauded the slogan's clear, concise message.

The survey participants who preferred "Eat smart. Move more. Feel great" appreciated the cause-and-effect relationship it depicts among diet, exercise, and good health. They also commented on the slogan's "positive" end result. They reasoned that if they combined healthful eating with exercise, they would attain healthy living and "feel great." Some respondents, though, thought the slogan was too wordy and prescriptive.

"Eat smart, be active, America" received mixed reactions. Some respondents preferred it because they found its message to be concise, motivating, and encouraging. Participants voiced differing opinions regarding the use of the word "America." Some found it to be inclusive, whereas others thought it inappropriate to use a nationalistic sentiment in a healthful eating message.

### Findings from Phase II Web-TV Tests—nutrition messages.

Participants reviewed 5 primary nutrition messages, each with supporting information. Table 6 lists the tested messages. Each message set (primary nutrition message and supporting information) was evaluated on 2 measures. The first measure explored how easy respondents found the information to understand, and the second posed whether the information would help them to make better decisions about eating a more healthful diet.

Table 7 provides the results. Overall, over 8 in 10 found the nutrition message sets to be easy to understand, ranging from 98% easy to understand (Focus on Fruit) to 83% easy

**Table 5.** Slogans Tested in Phase II Web-TV Test and Summary of Responses

Slogans	% High Appeal	Overall, which slogan do you think best reminds you to eat healthy and be physically active?
Steps to a healthier you.	49%	27%
Eat smart. Move more. Feel great.	29%	21%
Eat smart, be active, America.	26%	17%
Find your balance.	22%	10%
Be your healthy best.	21%	11%
Your foods. Your moves. Your pyramid.	15%	8%
Your foods. Your moves. Your way.	13%	6%

**Table 6.** Nutrition Messages Tested in Phase II Web-TV Test

**Focus on Fruit**

- Eat whole fruits—fresh, frozen, canned, and dried
- Go easy on fruit juices
- Eat a variety of fruit

**Vary Your Veggies**

- Eat more dark-green veggies like broccoli, kale, and other dark, leafy greens; frequently enjoy salads with greens like spinach and romaine lettuce
- Eat more orange-colored vegetables like carrots, sweet potatoes, pumpkin, and winter squash
- Eat more beans and peas, like pinto beans, kidney beans, black beans, garbanzo beans, split peas, and lentils

**Get Your Calcium-Rich Foods**

- Go low-fat or no fat when you choose milk, yogurt, and other milk products
- Get 3 cups of low-fat or fat-free milk—or the equivalent in yogurt and cheese—every day; for kids aged 2 to 8, it's 2 cups
- If you don't or can't consume milk, choose lactose-free products and/or calcium-fortified soy foods and beverages

**Make Half Your Grains Whole**

- Eat at least 3 oz. of whole-grain cereals, breads, crackers, rice, or pasta every day
- 1 oz. is about 1 slice of bread or about 1 cup of breakfast cereal
- Look for “whole” on the food package and ingredients list

**Go Lean on Protein**

- Choose low-fat or lean meats and poultry
- Bake it, broil it, or grill it
- Vary your protein routine—choose more fish, beans, peas, nuts, and seeds

to understand (Get Your Calcium-Rich Foods). In addition, more than 4 in 10 indicated that each set would help them “a lot” to make better decisions about eating a more healthful diet, with the fruit and protein messages receiving the highest scores (52% and 56%, respectively). Over 8 in 10 responded that each message set would at least somewhat help participants make better decisions.

**DISCUSSION**

**The Symbol's Shape**

The shape for a new food guide symbol was of interest to many professionals. Input on the shape was sought through a *Federal Register* notice in 2004 that laid out the overall plan for developing a Food Guidance System. Most of the comments received in response to this notice were in favor of retaining a pyramid shape. In addition, in Phase I, focus group participants were specifically asked about the shape

the new Food Guidance System symbol should take. After having seen a number of potential pyramidal and nonpyramidal replacements for the Food Guide Pyramid, most respondents thought the Food Guide Pyramid provides a solid foundation from which a new symbol should be an extension. They posited that the Pyramid's current level of familiarity should be seen as an asset. To them, a stark change in direction would mean starting from the beginning in terms of both recognition and message comprehension. As a result, they recommended that the new Food Guidance System symbol be pyramidal.

Some respondents suggested a new start for the Food Guide Pyramid, departing from the traditional shape. They believed, as did some who commented on the *Federal Register* notice, that the current Pyramid does not work or that it is not applicable to today's nutrition information, and therefore, it is time for a change. A few others contended that there is “nothing magical” about the Pyramid's shape that enables it to communicate health messages more effectively than other forms. Despite this contrary opinion, most respondents and professionals advocated for a pyramid-based or pyramid-influenced shape for the new symbol, while incorporating changes to its internal structure.

**The transition from Phase I to Phase II—graphics.**

After Phase I focus group testing, consumer responses were reviewed, and a subset of graphics was selected and refined for further testing in Phase II (Web-TV tests). Graphics selected for subsequent testing included the following elements: they were rated by focus groups as among the more appealing concepts; they clearly (to consumers) represented the concept of physical activity; and

**Table 7.** Summary of Consumer Responses to Messages in Phase II Web-TV Testing

Food Group Message Set	% Easy to Understand	To what extent would this information help you to make better decisions about eating a healthier diet?	
		A lot <sup>a</sup>	Somewhat <sup>b</sup>
Focus on Fruit	98%	52%	33%
Go Lean on Protein	95%	56%	30%
Make Half Your Grains Whole	90%	47%	33%
Vary Your Veggies	89%	48%	37%
Get Your Calcium-Rich Foods	83%	41%	39%

<sup>a</sup>= 4 or 5 on a 5-point scale

<sup>b</sup>= 3 on a 5-point scale

they included elements that could be used to communicate key messages about variety, proportionality, and moderation. Specifically, concept N<sub>2</sub>, concept J<sub>3</sub>, and concept W were selected.

A fourth pyramid-based graphic—graphic B—was developed for this Web test. Given focus group respondents' affinity for symbols that contained figures and connoted motion/physical activity and balance, an additional graphic concept was developed that attempted to convey these messages in a simpler manner than the other graphics identified for testing.

**Limitations.** Much of the research conducted during the development of Food Guidance System materials employed qualitative research. This research method provides valuable insights into a particular group's thoughts, feelings, and perspectives—especially “red flags”; however, recruiting techniques and small sample size mean that results are not statistically representative of a larger population. Consequently, findings from research events were considered to be descriptive and directional and not necessarily representative of a broader population. Although this research method is extremely useful, especially when used in a formative research plan, measuring appeal and ability to understand messages quantitatively would have augmented this research approach.

## IMPLICATIONS FOR RESEARCH AND PRACTICE

Based on the formative research with consumers, symbol J (Figure 4) was selected as the graphical symbol for the MyPyramid Food Guidance System. It was incorporated into the MyPyramid.gov Web site and all MyPyramid print materials, and it has since been adopted or adapted for use on many materials developed by other organizations to teach MyPyramid and Dietary Guidelines concepts. Some of these materials can be accessed through the MyPyramid e-catalog on the SNE.org Web site.

A variety of qualitative research techniques were employed during the development of MyPyramid. These techniques may be useful to other researchers as part of the formative research process for other consumer nutrition education tools. Findings from the research process may be instructive for nutrition education practitioners. Consumers expressed their desire for continuity, as represented by the pyramid shape, as well as new and updated information. They related to images that they felt were personal, active, and motivational. Colorful, inviting, and exciting tools and materials are needed to capture and hold the interest of contemporary online consumers.

## ACKNOWLEDGMENTS

The authors would like to acknowledge and thank the staff of Porter Novelli, especially Deanne Weber and Christina

Uy for their contributions to this research. We also extend our appreciation to the individuals who participated in the focus groups and Web-TV surveys and shared their insights and beliefs.

All of the figures in this article have also been compiled into an online slideshow. See [www.JNEB.org](http://www.JNEB.org), under supplementary material for this article.

## SUPPLEMENTARY DATA

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.jneb.2006.08.002](https://doi.org/10.1016/j.jneb.2006.08.002).

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