Achieve Better Health With Nutrient-Rich Foods

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Nutrition advice given to the American public has long focused on what nutrients and foods to avoid. However, the sustained efforts to improve diet quality and health outcomes have fallen short of their goals. Most Americans do not consume sufficient amounts of key nutrients that are important for health, and 2 of 3 adults are either overweight or obese. A more positive approach to dietary guidance is to create educational messages built around foods and nutrients to encourage. Positive, diet-centered advice based on nutrient-rich foods that contain relatively more nutrients than calories can help Americans improve their eating habits and achieve better health. Building on its 2004 symposium, the Nutrient Rich Foods Coalition's 2009 symposium in Washington, DC, presented a scientifically validated metric for nutrient density and described educational tools to help communicate the importance of nutrient-rich foods to consumers. Nutr Today. 2012;47(1):23–29

Many nutrition education programs aimed at promoting good diets and better health have used primarily negative messaging in dietary guidance. The American public has, for years, been advised to reduce the consumption of frowned-upon foods, limit the intake of problematic nutrients, or avoid selected foods, nutrients, or dietary ingredients altogether. However, diet quality has not improved, systematic efforts at promoting better diets have fallen short of their goals, and a majority of Americans are now either overweight or obese. This places nutrition education at a strategic crossroads. It may be time to replace the ineffective system of food avoidance with educational messages that emphasize the positive aspects of nutrients and foods to encourage.

Selecting nutrient-rich foods as the basis of a healthful diet is a principle expressed in the 2005 Dietary Guidelines for Americans (DGA). The time has come for nutrition educators to embrace a more positive and balanced approach to eating well, one that is built around nutrient-rich foods that are the essential components of a healthful diet. Selecting nutrient-rich foods will allow consumers to satisfy nutrient requirements without exceeding their energy needs. Positive messages about identifying and selecting more nutrient-rich foods from all food groups, rather than negative messages about what to avoid, may be a more persuasive communications strategy for dietary change. All Americans could benefit from nutrition education programs that teach them effective ways to get more nutrients from the calories they consume.

Encourage positive enjoyable aspects of food and nutrient to change the nutrition education program.

The benefits associated with the consumption of nutrient-dense (or nutrient-rich)—as opposed to energy-dense—foods have long been accepted by health professionals. However, communications based on the nutrient density of foods as a positive attribute have not been used widely in nutrition education.1 Nutrient-dense foods have been described as those that provide substantial amounts of nutrients for relatively few calories or those that provide fewer calories than nutrients. The lack of a scientifically valid definition of nutrient density2 can be remedied by the new technique of nutrient profiling. Described as the science of ranking or classifying individual foods based on their nutrient composition, nutrient profiling takes a number of different nutrients into account. Depending on the balance of nutrients to encourage and nutrients to

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limit, each food is assigned a unique score that reflects its total nutritional value per reference amount. The Nutrient Rich Foods (NRF) Coalition sponsored the “Achieve Better Health With Nutrient-Rich Foods” symposium, held in Washington, DC, on March 16, 2009. Principles and methods of nutrient profiling and comprehensive education tools to help people choose more nutrient-rich foods and build healthier diets were presented to leaders in government organizations, academia, the food industry, and health and professional groups.

SHIFTING THE PARADIGM FROM AVOIDANCE TO ENCOURAGEMENT

The moderator of the symposium, Adam Drewnowski, PhD, director of the Center for Public Health Nutrition and the Center for Obesity Research, both at the University of Washington, Seattle, set the stage for a discussion by contrasting consumer responses to positive and negative nutrition messages. Surveys conducted by the NRF Coalition revealed a high level of interest among consumers and health professionals in a potential shift in approach:

• A survey of 1019 adults found that 78% agreed that they were looking for a simple, practical tool to help them get more nutrients from their calories.
• In another survey of 250 registered dietitians and 250 pediatricians, most (97% and 96%, respectively) agreed that to fight the obesity crisis, Americans need help to think positively about what foods to eat instead of what foods to avoid.

The literature on the effectiveness of nutrition education is mixed. The current approaches may not be achieving desired changes in consumer behavior or improvements in public health. Currently, two-thirds of the US population is either overweight or obese, and an estimated 7% of the population has type 2 diabetes. James O. Hill, PhD, director, Center for Human Nutrition, University of Colorado, Denver, stated that nutrition education is at a crossroads. Health professionals and educators can either continue along the same path or acknowledge that it is time for a shift from a philosophy of avoidance and deprivation to one of encouragement and enjoyment. To date, much of the communication of nutrition guidelines has been about what not to eat: fat, sugar, trans-fat, saturated fat, calories, and large portions. But this approach focuses only on telling Americans to avoid many of the foods they find most appealing, and these avoidance messages have not achieved the desired improvements either in diet quality or in weight status. The time is right to provide consumers with a different way to think about eating as we evolve from a model of deprivation to one of enjoyment and shift from a philosophy of avoidance to one of encouragement, all while promoting healthier behaviors and communicating the importance of a total lifestyle approach. Hill also noted that physical activity must be promoted as an integral facet of this new approach. Without physical activity to help balance the calorie equation, it will be impossible to promote the type of diets that consumers will find acceptable over the long-term. Encouraging consumers to make small changes toward a healthier diet and to increase physical activity will initiate a “cycle of confidence,” in which making small changes increases the chances for success and creates confidence that the next step can be successfully taken.

New social media outlets may provide effective tools to encourage people to make significant changes. Facebook, Twitter, and MySpace should all be used to effectively shift to more positive nutrition communication.

It is time to switch from a model based on foods to avoid and deprivation.

Hill emphasized that nutrition educators should come together to promote this paradigm shift from avoidance to encouragement and from deprivation to enjoyment. He said that all preconceived notions of what works and what does not instill behavior change ought to be left behind so that nutrition, physical activity, and weight management can be approached from a completely new perspective. Drawing on his prior research on the importance of small changes in behavior, Hill made the following overarching recommendations:

• Nutrition educators must develop and implement a new communications approach based on positive nutrition messaging. If nutrition guidelines and education continue to use the current negative messaging, there will be no nutrition-related improvements in public health.
• Scientists and nutrition educators should be on the leading edge of this paradigm shift.
• As the shift is made from deprivation to encouragement, nutrition educators must teach consumers about a total lifestyle approach, including diet and physical activity in ways that are sustainable over the long-term.
• This positive paradigm shift is best approached in small steps to achieve big results.

THE PARADOX OF POSITIVE MESSAGES

Brian Wansink, PhD, director, Cornell Food and Brand Lab, Cornell University, Ithaca, New York, presented additional information designed to motivate participants to rethink the use of current negative nutrition education messaging. Health and nutrition consumer education messages are generally categorized as either positive (eat more fruits and vegetables) or negative (do not smoke). But research is inconsistent as to which type of message is most effective in instigating behavior change. Whereas some behavior change theories suggest that positive messages are better, negative messaging notably with tobacco cessation has proven to be highly effective over time.
Wansink compared 2 nutrition messages, one advising “Drink your milk so you’ll have strong bones” versus the warning that “If you don’t drink your milk, you’ll be hunched over in a wheelchair.” Determining the more compelling message appears to depend on the audience. Although people who are not nutritionally motivated appear to be more persuaded by positive messages, nutrition experts generally find negative messages to be more persuasive. As a result, they tend to create nutrition education messages that are negative in nature. This so-called me-marketing explains, in part, why such a large number of negative nutrition messages exist. What is critical to understand, however, is that the people who need to hear a nutritional message are not the experts. As a result, what will work on a highly educated, nutrition-savvy population segment is unlikely to work on most other people.  

Negative frightening messages may appeal to nutrition experts, but not to consumers.

Another consideration in developing effective nutrition messaging is that the process of making food-related decisions differs from the process used to make many other health-related and intake frequency decisions. Everyone must eat every day, and people choose foods because of their emotional state, values, beliefs, and culture, not only their nutrient needs. Unlike smoking, which is clearly linked to serious disease outcomes, negative endpoints are less well-defined for nutrition, making nutrition education messages inherently less motivating. For most people, negative, fear-based campaigns are the wrong model for nutrition messages. Positive messaging is most appropriate for nutrition issues, which lack the certainty of attributable risk, not to mention the inherent drama of other health-related issues such as smoking or drug use. Overall, in most situations related to foods, nutrition, and dietary choices, positive messages worked best with most people.

THE IMPORTANCE OF NUTRIENT-RICH FOODS IN CHILDREN’S DIETS

There is an urgent need for positive nutrition communications directed at children and adolescents. American children today are eating quite differently from the nutrient-rich food base recommended by the 2005 DGA. These differences begin early in life, according to Robert Murray, MD, of the Center for Healthy Weight and Nutrition, Nationwide Children’s Hospital, Columbus, Ohio. Dietary studies of children’s eating habits have shown that by age 15 to 18 months, more than one-quarter of children in the United States are consuming sweetened cereals and one-half are consuming soft drinks or sweetened fruit drinks. Desserts are being introduced even earlier, with 45% of children eating desserts at around 7 to 8 months of age, shortly after being introduced to their first solid foods. In addition, an analysis of data from the third National Health and Nutrition Examination Survey (1988–1994) revealed that more than 30% of daily energy intake by children and adolescents came from energy-dense, nutrient-poor foods, such as packaged snack foods. In addition, these foods are displacing more nutrient-rich foods containing key nutrients, including protein, fiber, vitamins A and B<sub>6</sub>, folate, calcium, magnesium, iron, and zinc. The tendency to choose energy-dense, nutrient-poor foods and beverages is established in the first years of a child’s life, depriving children and adolescents of the nutrients they need. Dr Murray suggested that the nutrition community must recognize adolescents’ snack food consumption habits when providing dietary advice. Rather than pressuring them to avoid the foods they most enjoy, nutrition experts may need to consider the idea of fortifying snack foods with the nutrients that adolescents need, helping them get more nutrition from the calories they consume. The eating patterns of America’s youth clearly indicate the need for nutrient-rich nutrition communications tailored to children and adolescents.

NUTRITION EDUCATION FOR SOCIOECONOMIC AND CULTURALLY DIVERSE POPULATIONS

Ivan J. Juzang, founder and president, Motivational Entertainment Productions Inc, a Philadelphia-based research organization that specializes in studying socioeconomic and culturally diverse communities, provided insights about the unique challenges that nutrition educators face when promoting nutrient-rich foods to low-income minority youth and their parents. To be effective, messages designed to identify the problem and address the solution must use a culturally relevant approach and incorporate language that is understandable, easy to relate to, and delivered in an appropriate cultural context. Juzang described ongoing consumer research that will help identify the best methods for promoting nutrient-rich foods to low-income Hispanic, African American, and white urban youth and their parents. Research is aimed at understanding the cultural norms, attitudes, and beliefs about food, nutrition, and healthful eating and will identify parents’ top concerns regarding their children’s health and how nutrition fits within those concerns. It will explore attitudes, knowledge, and understanding of nutrient-rich foods; reveal the barriers to choosing nutrient-rich foods; and identify the influencers that determine food choices. It will also assess reactions to potential messages about nutrient-rich foods, for example, positive versus negative messaging.
Incorporating nutrient-rich foods into school menus poses a number of challenges to school food service workers that need to be overcome. Foods served to children need to be nutritious, affordable, and appealing. Schools need to promote the learning of cooking skills and exposure to a wide variety of nutrient-rich foods on the part of students, parents, and teachers. Achieving these goals in the face of limited budgets will not be easy. Acquainting the entire community with the positive concept of nutrient-rich foods can be accomplished in small steps such as family nutrition education nights, fairs, and newsletters. It is crucial that nutrition educators develop authentic messages that will resonate with community members to drive the consumption of nutrient-rich foods and ultimately improve public health.

THE SCIENCE BEHIND THE NUTRIENT-RICH FOODS APPROACH

The concept of nutrient density is a cornerstone of the 2005 DGA and MyPyramid. The 2005 Dietary Guidelines Advisory Committee (DGAC) recommended that more research be conducted to develop a scientifically valid definition of nutrient density and to determine how the concept of nutrient density could best be communicated to the consumer. The NRF Index, presented by Drewnowski and developed in response to this need, is a scientifically validated metric that can assess the nutritional quality of individual foods based on their nutrient composition. The NRF Index uses a scientific formula that takes into account both nutrients to encourage and nutrients to limit to assign a unique score to each beverage or food.

The NRF Index assesses the nutritional quality of individual foods and beverages.

The nutrients to encourage in the NRF Index were selected based on several authoritative sources, including the 2005 DGAC list of shortfall nutrients in the American diet, the nutrients included in the Food and Drug Administration’s definition of “healthy” foods, and nutrients of concern for specific segments of the US population: minorities, older adults, and women of child-bearing age. The 3 nutrients to limit were chosen based on DGAC and the current Food and Drug Administration guidelines. Throughout the development process, food scores generated using the NRF Index were compared with independently obtained measures of a healthful diet. The strength of correlations with the US Department of Agriculture’s 2005 Healthy Eating Index (HEI) was used to guide decisions about NRF Index components. A family of NRF indices with a range and combination of nutrients to encourage (6–15 nutrients) and 3 nutrients to limit (saturated fat, added sugar, and sodium) were validated against HEI to determine the index’s ability to predict diet quality. Healthy Eating Index diet scores were based on National Health and Nutrition Examination Survey 1999–2002 data. The index that most closely correlated with HEI was NRF 9.3, which contains 9 nutrients to encourage (protein; fiber; vitamins A, C, and E; calcium; magnesium; iron; and potassium) and 3 nutrients to limit (saturated fat, added sugar, and sodium). All daily values were calculated per reference amount (100 kcal or serving size) and capped at 100%. The NRF Index formula provides raw scores with varying ranges and numerical distributions for each of the 5 basic food groups. Based on consumer and nutrition research, the NRF Coalition developed 5 categories for evaluating calorie-containing foods and beverages, with 1 being the least and 5 being the most nutrient rich. The NRF Index scores of 1 to 5 were used in select NRF food guidance tools.

BRINGING POSITIVE NUTRIENT-RICH MESSAGES TO LIFE

To make the NRF approach truly consumer driven, the NRF Coalition conducted several in-depth qualitative and quantitative research studies with more than 3000 people starting in 2004. The research was designed to help bring the NRF Index to life for people and give them a tangible way to build healthier diets. It resulted in 4 guiding principles for how best to reach consumers with positive nutrition messages.

1. Layer information for different users. Some people want very basic information about what to eat, whereas others want detailed information about meals and eating patterns. Nutrition education tools should offer different levels of readily accessible, easy-to-understand nutrition information, allowing people to choose the depth of understanding they want.
2. Connect touchpoints. Because it is important to reach people at multiple touchpoints throughout the day, nutrition education tools must communicate consistent nutrition information wherever and whenever people make food decisions—whether in the supermarket, at home, at school, or in the doctor’s office.
3. Teach through experience. Learning through experience enhances behavior change. Effective nutrition education tools allow users to track what they eat and measure results over time. Because many people are already familiar with the food groups, tools should leverage and build on that existing knowledge base, not start from scratch.
4. Enable lifestyle change. Making several small changes can lead to sustainable behavior change that makes healthy eating second nature. Nutrition education tools should be designed to provide multiple opportunities to improve diet quality.
To illustrate how the NRF Index can be used in positive food guidance, a comprehensive educational tool based on the NRF Index and the consumer research studies mentioned above was presented at the symposium. The tool, called “My5, What Nourishes You,” uses a positive approach to teach people how to choose more nutrient-rich foods within each food group to improve overall diet quality. My5 also can be used to rate and compare meals and total diets. The challenge was to combine the mathematics of the NRF scoring system with the existing MyPyramid guidance system in an easy-to-understand and visually compelling manner. As shown in the Figure, the key My5 visual elements were the target shape, MyPyramid colors for each food group, and an easy 5-point scoring system.

To test consumer understanding of the My5 tool, the NRF Coalition conducted an online quantitative study of adults aged 18 to 65 years. When asked to rate the My5 tool on a 9-point scale, consumers gave it an average score of 7.4. When asked specifically about anticipated usage of the My5 tool, 8 of 10 consumers said they would use it at least once a week.

**FIGURE.** The My5 Nutrient Rich Foods educational tool delivers comprehensive layers of information at-a-glance and can be applied to individual foods, entire meals, and foods eaten during a whole day or more. In the example here, applied to a whole day’s intake, My5 incorporates MyPyramid food group servings and food group colors. The maximum nutrient-rich score is indicated by 5 concentric rings of progressively darker colors. The recommended number of daily servings from each food group is indicated as well. The caloric tracker keeps the balance between energy content and nutrient density of the daily diet.
THE EFFECTIVENESS OF THE NRF CONCEPT

As part of the ongoing research efforts into the effectiveness of the NRF approach, a large, randomized educational intervention trial was started in February 2009 to identify to what extent education about the NRF concept and tools had the potential to change consumer knowledge, attitudes, and behavior related to meal planning, food shopping, and eating nutrient-rich foods and affect overall diet quality. Karen Glanz, PhD, MPH, Penn Integrates Knowledge professor of medicine and nursing, University of Pennsylvania, Philadelphia, presented the study design at the symposium.

Before and after the 8-week intervention period, a telephone survey was conducted to assess participants’ knowledge, attitudes, and practices with regard to nutrient-rich foods, and 24-hour recall data were collected to assess food intake. The intervention group was educated about the NRF approach to eating and the control group was educated about the DGA. Topline results were presented in a webinar held on October 6, 2009, and full results are being prepared for publication.

BREAKOUT SESSIONS

Attendees participated in 1 of 2 breakout sessions with the goal of developing a roadmap for putting positive nutrition education and the NRF approach into action. The sessions focused on how to create a sense of urgency in using nutrient density to improve the total diet quality of Americans and infiltrate the consumer food decision process with positive nutrition messages.

HOW CONSUMERS MAKE FOOD DECISIONS

Carolyn Britton, MD, MS, associate professor of clinical neurology, Columbia University Medical Center, New York, acted as facilitator for the breakout discussion “How Consumers Make Food Decisions.” Some of the conclusions and recommendations from the breakout session include the need for the following:

• Nutrition educators to concentrate on developing more effective communications
• Broad-based dissemination of communication campaigns to reach the target audiences
• Simple reproducible messages
• Effective communication to minority populations, who will comprise more than 50% of the US population by 2042
• Use of social networking sites on the Internet, blogs, and mobile phone applications to help deliver nutrient-rich foods messages
• Effective communication of positive nutrition education messages to children
• Alliances with trade organizations and publications to help spread nutrient-rich food messaging via restaurants, supermarkets, magazines, and books

IMPROVING TOTAL DIET QUALITY FOR AMERICANS

Dayle Hayes, MS, RD, president of Nutrition for the Future, Inc, Billings, Montana, acted as facilitator for the breakout discussion “Improving Total Diet Quality for Americans.” Some of the conclusions and recommendations from the breakout session include the need to

• Focus on a total diet approach to get the nutrient-rich foods message across to consumers
• Create momentum and a “cycle of confidence” for using positive messages and tools
• Speak with consistency when delivering nutrient-rich food messages to consumers
• Make nutrient-rich food messaging part of a total lifestyle approach that includes nutrition, physical activity, and overall health and wellness
• Holistically present healthful eating as the means to achieving better health, versus fragmenting the messages into food groups or nutrition for specific diseases
• Tailor messages to reach the total family, while appealing to young women and girls—the nutrition gatekeepers of tomorrow.

CONCLUSIONS

A shift from negative to more positive nutrition messaging is urgently needed to improve America’s health. A scientifically valid definition of nutrient density supported by user-friendly nutrition education tools may help Americans make dietary choices that are more in tune with the foods’ nutritional value. Being able to identify the most nutrient-rich choices within each food group has the potential to help Americans obtain more nutrients per calorie consumed, improve diet quality, and achieve better health. Developing a more positive approach to nutrition education has additional benefits for consumer behavior. It can help create a “cycle of confidence,” in which making small changes increases the chances for success and creates confidence that the next step in building a healthful lifestyle can be successfully taken.

REFERENCES

Global Networking for Dietetics: Part of Professional Practice

We are all now part of a global village. With the internet, social networking, easier and faster travel, there is greater movement of people and product around the world. For dietetics professionals, this has more implication perhaps than for some other professions. The food we eat is no longer obtained primarily from local areas and we need to be cognizant of how and where foods are produced. However, this is not the only issue. There is an aspiration for flexibility and movement among health professionals in order to meet personal goals, increase experience and possibly to relocate. This is why the International Confederation of Dietetic Associations (ICDA) is an important part of the international networking of dietetics professionals. The ICDA membership are associations who have >50% members as dietitians. In July 2011, there were 40 members making up a global network of more than 180,000 dietetics professionals around the world. The CDA was originally a committee to organise the once in four years International Congress of Dietetics (ICD). In 2000, this was altered to be a more contemporary, broad based organisation. Since that time the ICDA has worked on issues of international interest. The present (2008–2012) strategic plan focuses on building strong leadership within and of, ICDA, developing a stronger, integrated communication system, and enhancing the profile of the profession. Strategies and actions to deliver these include developing marketing plans, building ICDA leadership capacity, increasing participation in international policy and programs, enhancing the website (www.internationaldietetics.org), building a common language, building consensus, developing international standards of education, training and practice and defining evidence-based practice in dietetics. In addition the ICDA encourages and supports initiatives such as the International Dietetics and Nutrition Terminology in the broader international arena.

Once every four years, one of the member associations hosts the International Congress of Dietetics (ICD). The 16th congress will be in Sydney Australia in 2012 (website www.icd2012.com), and the 17th will be in Granada, Spain in 2016. Congresses are an opportunity for the international community to meet and exchange ideas at both the individual and the organisational level. Associated with the congress are workshops for the member associations which set the direction for the ICDA as well as serving as the decision point on topics such as standards and definitions. The challenges of reaching out across borders and languages are significant, but the growing influence of the profession in the international arena are important outcomes of this work.

All dietetics professionals can keep up to date with the activities of the ICDA and interact via the website. The common ground between member nations is considerable, but we can all still learn from each other.