

**EFNEP's Alignment with Emerging Research and Federal
Food Policy:
Current EFNEP Programming Reflects the 2010 U.S. Dietary Guidelines**

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Introduction and Purpose

The Expanded Food and Nutrition Education Program (EFNEP) is federally funded by the National Institute of Food and Agriculture (NIFA) of the U.S. Department of Agriculture (USDA) and delivered locally through Cooperative Extension Systems of land-grant universities to limited resource youth and families with young children in each U.S. state and territory (1). In accordance with national policy, EFNEP personnel use the most recent federal food policy, the *Dietary Guidelines for Americans*, to facilitate improved food and physical activity choices and behaviors in those they teach (2).

This report was commissioned by EFNEP leadership at NIFA to assess how well positioned EFNEP is to address changes in the *Dietary Guidelines for Americans 2010 (DGA)*, which were released January 31, 2011. With increased attention to the “evidence base” of programming, and NIFA’s mission connecting research, education, and outreach, it was also deemed important to consider how EFNEP fits with the emerging science, as reflected in the *Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 2010 (or DGAC Report)*, as that document included the current and emerging science upon which the *DGA* are based (3).

EFNEP has been widely recognized as a quality program with its lessons addressing the dietary guidance of the day. As the nutrition science emerges, is EFNEP remaining current, relevant, and appropriate? Is it poised to continue at the forefront of nutrition education programs? Is EFNEP prepared to teach the *Dietary Guidelines for Americans 2010*? Through the lens of the *Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 2010* (3) and the resulting *Dietary Guidelines for Americans, 2010* (4), this report proposes to answer the question from several key perspectives, including examining the fit to programming that results as science evolves and policy emerges.

To address these questions, a thorough review of the *DGAC Report* and *DGA* was conducted. Additionally, interviews were conducted with four state EFNEP Coordinators/Directors who were selected for their rich experience in curricula development and whose curricula are used in many state programs. The review explored how the policy (*DGA*) and emerging science (*DGAC Report*) are addressed through EFNEP's four key foci: 1) basic nutrition and physical activity, 2) food resource management, 3) food security and 4) food safety. These were considered in the context of how EFNEP is delivered – EFNEP paraprofessionals teaching about foods and food components to low-income youth and families with young children, with a goal to improve food and physical activity behaviors, and therefore health.

Findings from this report will be used to guide program policy, curricula development/revision, and implementation decisions. An oral report of findings was also shared at the National EFNEP Conference, in March 2011.

Historical Context

EFNEP has been viewed as a “cutting-edge program” since its beginning in 1969. At its inception, “specialists in the fields of nutrition and education identified basic concepts for nutrition education. These basic nutrition concepts linked food, nutrition and health and underscored the importance of the application of knowledge. The concepts provided the framework for delineating the core content areas for the EFNEP: basic and family nutrition, food habits, food preparation, food preservation and storage, food selection and buying, and meal planning. The specific content was, and still is, based on the latest research-based findings” (5). It seems particularly appropriate that administrators of this “cutting-edge program” seek today to identify how true and targeted the content remains as nutrition science emerges.

The *Dietary Guidelines for Americans* or *DGA* debuted in early 1977, following years of discussion, debate and consideration of current science. Those first nutrient-based goals remain relevant today, as the authoring U.S. Senate Select Committee on Nutrition and Human Needs, led by Senator George McGovern, recommended increased consumption of complex carbohydrates and reduced consumption of refined and processed sugars, total fat, saturated fat, cholesterol and sodium (3). Additionally, most of the first food-based goals also ring familiar: increase consumption of fruits, vegetables and whole grains; while decreasing amounts of foods high in refined and processed sugars, total fat, animal fat and salt.

The research foundation supporting those 1977 recommendations was questioned – was there *science* to support the goals (3)? Additional expertise was garnered as consistency was sought in diet and health guidance. Since 1977, the goals have become increasingly specific, and in each subsequent version of the goals, the science base has become stronger. Since 2005, use of a systematic review of scientific literature has undergirded the recommendations. For 2010, the authoring committee used the newly developed Nutrition Evidence Library (NEL) to research and answer questions it identified (3). As with previous editions, *Dietary Guidelines for Americans 2010* forms the basis for nutrition policy in Federal food, nutrition, education and information programs (4), including EFNEP.

EFNEP’s Alignment with Emerging Research and Federal Food Policy

Balancing Calories

Excess body weight – An excerpt from Part A of the *DGAC Report* executive summary begs reflection by any person charged with the task of nutrition education programming. “The 2010 DGAC Report...addresses an American public of whom the majority are overweight or obese and yet undernourished in several key nutrients” (3). Does EFNEP, a program that stresses healthful eating and improved access to nutritious foods, adequately tackle the complex extremes of nutrient inadequacy in tandem with excess body weight?

EFNEP is not designed or intended to be a weight reduction program. In its earliest days, EFNEP addressed nutritional concerns often associated with *under* nutrition –

undernourished, underweight children in low-income families struggling to obtain enough food. This situation still exists in some cases. But the reality of malnutrition in the U.S. in 2011 is more often one of high body weight coupled with low nutritional status. Indeed, low-income children and adolescents are more likely to be obese than their higher income counterparts (6). **EFNEP programming continues to approach healthy weight in the context of good nutrition and physical activity; healthy, low-cost food choices; household food security; cooking skills, etc., for low-income families living in today's obesogenic environment.** This practice is well-aligned with the newly released *Healthy People 2020* goals, which challenge Americans to: "Promote health and reduce chronic disease risk through the consumption of healthful diets and achievement and maintenance of healthy body weights" (7).

With the emphasis of *DGA 2010* on balancing calories to manage weight, all Americans – children, adolescents, adults and older adults – are encouraged to strive to achieve and maintain a healthy body weight. This message is also important for U.S. population subgroups, including women capable of becoming pregnant, pregnant women and older adults. **EFNEP is optimally positioned to address maternal obesity before pregnancy as well as excessive weight gain during pregnancy.** EFNEP must consider this opportunity to strengthen its healthy weight message at a time that can positively affect this, the next and even subsequent generations.

The *DGA 2010* emphasizes not only the healthy eating part of weight, but also America's need to engage in physical activity. "Increase physical activity and reduce time spent in sedentary behaviors" (4) serves as a challenge to all, EFNEP participants and educators alike. Does EFNEP give adequate attention and emphasis to physical activity as part of the equation? Perhaps EFNEP nutrition educators are less comfortable teaching physical activity because of its fairly recent inclusion into the *DGA* (8), or perhaps physical activity is perceived as having a secondary or support role to nutrition education. Whatever the reason, physical activity has not fully become a core component of what EFNEP teaches, but is essential for its role in helping program participants in achieving and maintaining a healthy weight. Additionally, EFNEP must work to assure that nutrition educators model positive physical activity. "Calories consumed must equal calories expended for a person to maintain the same body weight." This message from *DGA 2010* needs to be strengthened through actions in EFNEP as well as through its lessons.

Recent EFNEP conferences have included physical activity as a session topic and session breaks have provided opportunities to practice ways to incorporate physical activity into EFNEP lessons. Still, **more attention is needed on how to incorporate physical activity into the EFNEP learning experience.** A program policy that supports the inclusion of physical activity, and ongoing professional development teaching our coordinators and paraprofessionals how to safely incorporate physical activity into lessons, may help increase this focus.

Nutrient Adequacy

Nutrients are the common denominator that link nutrition research (the science) and nutrition education (the outreach or application). The following nutrients have been identified in the DGAC report as “shortfall nutrients.” The evidence identifies these points of concern in the American diet.

Calcium and Vitamin D – Since the *Report of the DGAC on the DGA* was released in May, 2010, new recommendations regarding these nutrients have been announced from the National Academy of Sciences (9). While increases in the *nutrient* vitamin D are recommended, the guidance urges *food* sources as the first choice in addressing the increased recommendations. EFNEP, with its focus on foods and lessons on label reading, is well situated to help participants meet these needs. In one example, curriculum authors noted that lessons guide adult EFNEP participants to work toward the goal of “families get(ting) enough calcium from low-fat or non-fat dairy foods or other foods high in calcium.” Since dairy foods are some of the most common dietary sources of vitamin D, and vitamin D is a vital part of healthy bone formation, **current EFNEP lessons addressing calcium-containing foods could easily be broadened to include a deeper discussion of food sources of vitamin D.**

Potassium – The *Report of the DGAC* concluded that a “moderate body of evidence has demonstrated that a higher intake of potassium is associated with lower blood pressure in adults (3).” The *DGA 2010* identifies nutritious foods for Americans to increase, and further notes that potassium is a “nutrient of public health concern (4).”

Dietary potassium can lower blood pressure by blunting the adverse effects of sodium on blood pressure. Other possible benefits of an eating pattern rich in potassium include a reduced risk of developing kidney stones and decreased bone loss. The *DGA 2010* emphasizes that “the health benefits of adequate potassium intake, coupled with its low current intake by the general population, warrant its increased intake from food sources” (4). Increased fruit and vegetable consumption markedly increases potassium intake, and EFNEP is successful in this effort. Of the five USDA nutrition education programs reviewed, EFNEP has consistently produced the best results in terms of increasing fruit and vegetable consumption among low-income families (10). Milk and dairy foods are also major contributors of potassium in the U.S. diet. Potassium is not mentioned by name in the EFNEP curricula surveyed for this report, but excellent food sources of potassium, particularly fruit, vegetables and milk products, are taught and encouraged throughout EFNEP lessons on healthy eating. Potassium is presently tracked through the EFNEP Reporting System, NEERS5, and is planned for the database and reports in a web-based reporting system currently under development and planned for 2013 release. **EFNEP’s focus on foods as the vehicle for important nutrients, including potassium, echoes the guidance of *DGA 2010* as Americans are encouraged to build healthy eating patterns.**

An example of a food pattern that may be useful with EFNEP audiences is Dietary Approaches to Stop Hypertension, or DASH. The DASH eating pattern emphasizes vegetables, fruits and low-fat milk and milk products; includes whole grains, poultry,

seafood and nuts; and is lower in sodium, red and processed meats, sweets and sugar-containing beverages than the typical intake of U.S. consumers. Research has shown the DASH eating pattern to lower blood pressure in persons with hypertension and pre-hypertension. DASH-style eating patterns have lowered blood pressure, improved blood lipids and reduced cardiovascular disease risk compared to diets designed to resemble a more typical American diet (4). Other plans, including the USDA Food Patterns, and Mediterranean-style and vegetarian adaptations, have similar strengths, including an abundance of vegetables and fruits, whole grains, a variety of protein foods and limited amounts of foods high in added sugars. Such plans include a higher proportion of oils than solid fats, and most are relatively low in sodium compared to current intake in the U.S.

Dietary fiber – The *DGAC Report* notes that “dietary fiber is under-consumed across all segments of the American population (3).” Many chronic disease risk factors could be reduced by increasing the amount of foods high in dietary fiber, including whole grain foods, cooked dry beans and peas, vegetables, fruits, and nuts. Authors of EFNEP adult curricula emphasize fiber through guidance-based lessons that encourage participants to “vary your veggies, focus on fruit, make half your grains whole,” with Nutrition Facts labels informing those decisions. Emphasizing instruction on the preparation of cooked dry beans and tips for incorporating nuts and seeds into EFNEP participants’ meals and snacks are simple but purposeful steps in helping our audience meet current dietary guidance.

Foods and Food Components to Reduce

The *DGA 2010* focuses on several dietary components generally consumed in excess in the U.S. The following areas are identified as points of concern, and were compared with EFNEP lesson content to determine the program’s alignment with current guidance.

Fatty acids, proteins, and carbohydrates – The concept of SoFAS (foods that are high in Solid Fats and Added Sugars) is emphasized in the *DGAC Report* (3). This concept was chosen to replace the often confusing and unclear message from the earlier guidelines addressing “discretionary calories” (3). Also identified as “non-nutrient dense” foods, SoFAS are considered to “contribute greatly to overall energy intake” without enhancing nutrient intakes. The *DGA 2010* notes that “solid fats contribute an average of 19%,” and “added sugars contribute 16% of the total calories in American diets (4).” Is this concept addressed presently in EFNEP curricula, either directly or indirectly? Is this new term useful to introduce as part of our teaching and evaluation? The authors that were surveyed identified lessons in their curricula that teach about reducing fats in the diet and the avoidance of excess sources of added sugars. **The term SoFAS is quite new in dietary guidance discussions and therefore not familiar to our EFNEP audiences, yet it could be easily woven into current lessons if it is perceived as helpful in delivering a meaningful message to our participants.** Lessons or activities that emphasize the recognition and reduction of SoFAS in our participants’ typical diets (e.g., regular cheese, franks, ribs, bacon, pizza, fried potatoes, ice cream, sodas and candy) could translate an abstract concept into a vivid image and opportunity for healthful change. Identification of SoFAS in the EFNEP entry and exit recalls, with a percentage of

total calories derived from SoFAS pre- and post-lessons, would allow EFNEP educators to individualize and illustrate key nutrition messages to each program participant.

A chapter focusing on protein foods and their relationship with health is included for the first time in the 2010 *DGAC Report* (3). Specific guidance provided by the *DGA 2010* encourages consumers to “choose a variety of foods from the protein foods group” and to “increase the amount and variety of seafood consumed by choosing seafood in place of some meat and poultry” (4). Although protein foods are discussed and taught in the adult EFNEP curricula reviewed for this report – both animal and plant sources of protein are discussed, and the necessity of protein foods for growth and repair in the body – seafood is not necessarily emphasized. **The message of “eating seafood in place of meat or poultry twice a week” could be easily woven into existing lessons.** This message would also support efforts to increase vitamin D food sources, decrease solid fat intake and increase overall diet variety.

Sodium - The need for lower sodium intake *as a population* was emphasized in the *DGAC Report* and resulted in a key recommendation in the new *DGA 2010*. Americans are encouraged to “reduce daily sodium intake to less than 2,300 mg and further reduce intake to 1,500 mg among persons who are 51 and older and those of any age who are African American or have hypertension, diabetes, or chronic kidney disease. The 1,500 mg recommendation applies to about half of the U.S. population, including children, and the majority of adults” (4). Are these recommendations addressed in current EFNEP curricula? Curricula authors reported that part of a single lesson focuses on the reasons to eat less salt and the skills to choose foods that are low in salt. **It is likely that EFNEP educators have *not* emphasized the reduction of sodium or salt sources in children’s diets (and not enough in adults’ diets) as this recommendation is new in DGA 2010.** An increased focus on sodium in the EFNEP diet summary – perhaps by increasing sodium’s prominence in the reports generated from the new web-based reporting system – would assist nutrition educators in their teaching role and EFNEP participants as they review their diet feedback.

Training EFNEP nutrition educators on healthy patterns such as the DASH plan and similar eating styles could encompass and emphasize a wide range of healthy behaviors that the new *DGA 2010* encourages Americans to adopt, including decreasing sodium, solid fats and added sugars in the diet, while increasing intake of low-fat dairy products, vegetables, fruits and fish/seafood. In general, EFNEP’s emphasis on food preparation has real potential to lower sodium in participants’ diets, as they decrease their reliance on processed, packaged and “fast” food/quick-serve options, which are major contributors of sodium in the U.S. diet today.

Changes in the composition of food products by the food industry could also contribute to a reduced intake of sodium and other nutrients/food products of concern. **EFNEP nutrition educators teach about reading food labels and the Nutrition Facts panel on products. Doing so will be even more important as product formulations continue to change, reflecting the influence of evolving national nutrition guidance.**

Building Healthy Eating Patterns

Water – The *DGAC Report* asks “what amount of water is recommended for health?” (3), but the DGA Committee determined that there is no evidence that water intake in the U.S. is either excessive or insufficient (3). Is the importance of drinking adequate water a part of present EFNEP lessons? Water is taught as a “Smart Drink Choice” in one of the adult EFNEP curricula surveyed, and typical water intake will be reported as part of the new web-based reporting system. Water consumption is an important message that must accompany discussions surrounding any increase in dietary fiber in the diet.

Food safety – The *DGAC Report* notes that “evidence shows that proper hand sanitation techniques, proper washing of vegetables and fruit, prevention of cross-contamination and appropriate cooking and storage of foods in the home kitchen are most likely to prevent food safety problems” (3). The *DGA 2010* again emphasizes “Clean, Separate, Cook and Chill” as key principles for building healthy eating patterns (4). Food safety is recognized to be vital to consumer health and safety overall, yet the DGA Committee reports that “consumer food safety knowledge is NOT typically transferred into practice” (3).

Food safety is a core component of EFNEP content and is used as a measure of program success. Results show that program participants improve in the area of food safety upon completion of EFNEP. In 2010, 67% of adult EFNEP graduates improved in one or more aspect of food safety (11). While such findings are higher than the national average for food safety practices, there is still room for improvement.

The *DGA 2010* identifies several groups of individuals, including pregnant women and young children, which are at increased risk to the effects of foodborne illnesses such as listeriosis and salmonellosis, and emphasizes the value of consumer education for this population. Given that food safety is taught not only to EFNEP participants, generally, but is especially emphasized with young children, pregnant teens and women, these recommendations reflect on the appropriateness of EFNEP content for its target audience.

How might EFNEP increase its ability to improve participants’ food safety practices? The *DGA 2010* features *Appendix 3: Food Safety Principles and Guidance for Consumers* (3). This supporting guidance with additional resources for food safety information provides useful, practical tools. However, in order to improve practices, consumers (including EFNEP participants) must accept the fact that food safety is relevant and vital to everyone, including themselves. In this area, **EFNEP must continue to first educate that foodborne illness is a threat, and then educate what can be done to prevent it.**

Helping Americans Make Healthy Choices

The *DGA 2010* emphasizes the intertwining factors and challenges influencing the choices individuals and families make “every day about what they will eat and drink and how physically active they will be” (4). Through the use of a social ecological framework for nutrition and physical activity decisions, all Americans, including those working with EFNEP, are urged to realize that only by working together can environmental changes be made. EFNEP participants and similar low-income audiences may be at particular risk

from an unhealthy food and physical activity environment. Food deserts, concerns about physical safety, and transportation issues are just a few of the barriers, in addition to limited financial resources, that challenge such audiences.

EFNEP's unique legislative mandate and organizational structure make it a natural for facilitating change at the most basic, personal level, while also contributing to change at the community and state environment level. As part of the communities, institutions and states in which they are employed, EFNEP staff must appropriately and purposefully join with other community, university and state partners in developing and pursuing action plans that lead to change. Creating environmental change is a slow process and must be hugely collaborative. EFNEP is good at networking relationships, but must become engaged on a deeper level. **EFNEP, and the universities of which they are a part, will need to determine how they can best and most appropriately respond to the DGA 2010's Call to Action.**

Current Actions and Recommendations

EFNEP program monitoring through the NEERS5 reporting system shows that EFNEP adult and youth participants are gaining the knowledge and making the types of improvements to their diets and physical activity behaviors recommended in the *DGA 2010* and *DGAC Report*. Additionally, efforts are ongoing to assure that EFNEP curricula and teaching are consistent with the *DGA*. The commission of this report is an example of one such effort.

Efforts are underway to strengthen EFNEP reporting as it transitions from a Microsoft Access® to a web-based application. Changes have been made to the system to reflect recommendations of the *DGA 2010*. Training is underway to ensure better understanding and use of local, state and national outcome data to guide program planning, management and teaching decisions. Concurrently, efforts are underway to assure that the instruments used to monitor the effectiveness of programming are valid and reliable. A multi-year, multi-state research project is examining EFNEP's tools, instruments and programmatic outcomes to assure their continued validity and reliability.

As noted, **most of the DGA 2010 recommendations are currently being taught in EFNEP**, and can easily be given increased focus to be consistent with the new guidance. Integration of the new recommendations is being adopted informally among program staff and more specifically through curricula reviews that are underway.

There are some guidance areas that EFNEP needs to give particular attention: 1) strengthening its healthy weight message, including prior to and during pregnancy; 2) emphasizing physical activity; 3) improving food safety behaviors; 4) increasing emphasis on food sources of vitamin D and potassium and 5) decreasing sodium in participants' eating patterns. These improvements will happen through updated lessons and individualized examples shared by nutrition educators as they not only "talk the talk" but also "walk the walk" of teaching and modeling healthy eating and physical activity behaviors with EFNEP participants. **Efforts to strengthen community and program**

collaborations have been an important part of EFNEP's past success, and will be vital to its continuity.

Giving attention to these areas, through curricula taught, relationships developed, research conducted and outcomes/impacts reported, can assure that EFNEP will remain relevant, current, and impactful. Indeed, EFNEP can remain at the forefront of nutrition education as it: 1) further incorporates recommendations of the *DGA 2010* and the *DGAC Report* working in harmony with NIFA, land grant universities, and the communities they serve, and 2) continues to forge a stronger span between nutrition science, policy, education delivery and results – between program and families.

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