

Dietary Guidelines Advisory Committee Meeting 1

Sponsored by the
U.S. Department of Health and Human Services (HHS)
U.S. Department of Agriculture (USDA)

Held at the
National Institutes of Health
Building 10, Masur Auditorium
9000 Rockville Pike
Bethesda, MD 20892

June 13-14, 2013

Day 1 Meeting Summary

Thursday, June 13, 2013

(8:30 a.m.)

Participants

Dietary Guidelines Advisory Committee (DGAC): Dr. Barbara Millen (Chair), Dr. Alice H. Lichtenstein (Vice-Chair), Dr. Steven Abrams, Dr. Lucile Adams-Campbell, Dr. Cheryl Anderson, Dr. J. Thomas Brenna, Dr. Wayne Campbell, Dr. Steven Clinton, Dr. Gary Foster, Dr. Frank Hu, Dr. Miriam Nelson, Dr. Marian Neuhouser, Dr. Rafael Pérez-Escamilla, Dr. Anna Maria Siega-Riz, Dr. Mary Story

Co-Executive Secretaries: Dr. Richard Olson, Ms. Colette Rihane, Dr. Kellie Casavale, Dr. Shanthi Bowman

Others: Dr. Howard K. Koh, Mr. Kevin Concannon, Dr. Catherine Woteki

Welcome

Dr. Richard Olson, Designated Federal Officer, Office of Disease Prevention and Health Promotion (HHS), called the first meeting of the 2015 Dietary Guidelines Advisory Committee (DGAC) to order at 8:45 am. Dr. Olson welcomed the meeting participants and introduced the Assistant Secretary for Health of the U.S. Department of Health and Human Services, Dr. Howard K. Koh. Dr. Koh who currently serves as a senior public health advisor to the Secretary supports the mission of creating better health care systems for prevention and care so all Americans can reach optimum health.

Dr. Olson highlighted some of Dr. Koh's career milestones, including roles as Commissioner of Public Health for the Commonwealth of Massachusetts and as Director of the Harvard School of

Public Health Center for Public Health Preparedness. Dr. Koh has published more than 250 articles in medical and public health journals and attained four board certifications: internal medicine, hematology, medical oncology, and dermatology.

Opening Remarks and Swearing In of the Committee

Dr. Howard K. Koh, Assistant Secretary for Health (HHS), thanked Dr. Olson and noted that both he and Secretary Sebelius are proud of the Committee members. Dr. Koh restated the mission to make this country healthier by moving from a “sick care” system to a system that embraces prevention and public health. Dr. Koh thanked Dr. Richard Olson, Dr. Don Wright, and the Office of Disease Prevention and Health Promotion (ODPHP) within the Office of the Assistant Secretary for Health. Dr. Koh highlighted the role of ODPHP in overseeing the *Physical Activity Guidelines for Americans*, Healthy People 2020, and other key health promotion and disease prevention initiatives, including the *Dietary Guidelines for Americans, 2015* in collaboration with USDA.

He explained that the *Dietary Guidelines for Americans* provides evidence-based, easy to comprehend instruction that empowers Americans to make healthier choices and provides the foundation for Federal nutrition programs and education to promote the health of Americans. This will be the eighth edition of the *Dietary Guidelines for Americans*, as it has been produced every five years since 1980 in a joint effort by HHS and USDA. Dr. Koh shared the enthusiasm of HHS for having its turn as lead agency during the development of the *2015 Dietary Guidelines*. Dr. Koh mentioned that the *Dietary Guidelines for Americans, 2015* will continue to focus on Americans two years of age and older, as there is currently a separate Federal interagency initiative focused on dietary guidance for Americans from birth to 24 months of age. The *Dietary Guidelines for Americans, 2020* will seek to provide dietary guidance to Americans of all ages.

Dr. Koh introduced the members of the DGAC and thanked them for volunteering their time and expertise to this initiative. He shared his anticipation of their independent science review, and reminded them that their work will have a real impact on Americans. He then administered the oath of office. Dr. Koh followed by sharing proverb, “If you want to go fast, go alone. If you want to go far, go together,” to summarize how the joint efforts of the Committee members and agencies will support and improve the health of Americans. He reinforced that the *Dietary Guidelines for Americans* supports the President’s goals and the commitments of Secretary Sebelius and Secretary Vilsack to build a healthier nation. Dr. Koh then invited USDA Under Secretaries Mr. Kevin Concannon and Dr. Catherine Woteki to join him and the DGAC members for a photo. Dr. Koh thanked and introduced the Under Secretary for USDA’s Food, Nutrition, and Consumer Services, Mr. Kevin Concannon, and the Under Secretary for USDA’s Research, Education, and Economics mission areas, Dr. Catherine Woteki.

***Review of the Committee’s Charge and the
Importance of the Committee’s Work on Setting Federal Policy***

Mr. Kevin Concannon, Under Secretary, Food, Nutrition, and Consumer Services, USDA, thanked Dr. Koh and stated that HHS and USDA have a strong history of working together on issues that are critically important to the health of our nation. On behalf of Secretary Vilsack and the Department of Agriculture, he thanked the DGAC for their willingness to serve and reviewed the Committee’s Charge.

Mr. Concannon stressed that while the Committee prepares an Advisory Committee report, it is not charged with developing the *Dietary Guidelines for Americans* policy document. He explained that food-based recommendations, the “what” to eat and “how much” to eat, are necessary to inform policies and programs throughout the government that rely on the *Dietary Guidelines* to set nutrition standards and guidance. He also made clear that the areas of expertise that each appointed Committee member brings to the process represents the array of topics ripe for inclusion into the *2015 Dietary Guidelines*.

Mr. Concannon explained that the American diet needs improvement and suggested that quantitative advice about “what” to eat coupled with behavioral strategies about “how” to achieve dietary guidance recommendations could be instrumental in helping Americans improve their diet. He also highlighted another important aspect of the Committee’s work, which is to identify research priorities and other topics that should be monitored for inclusion in future editions of the *Dietary Guidelines*.

He explained that the *Dietary Guidelines* is the cornerstone of Federal nutrition policy, is used throughout the Federal government, and provides a means for the government to “speak with one voice” on nutrition and health promotion. This is especially important to the mission of USDA, which is to provide leadership on food, agriculture, natural resources, rural development, nutrition, and related issues based on sound public policy and the best available science. He explained that the *Dietary Guidelines* is used in some way to carry out much of the work within the Department of Agriculture.

Mr. Concannon closed his remarks by noting the importance of the Committee’s work in ensuring the health of our nation and building a healthier next generation. Mr. Concannon welcomed Under Secretary and Chief Scientist, Dr. Catherine Woteki, to the stage for her remarks.

Role of the Dietary Guidelines for Americans in the Federal Research Environment

Dr. Catherine Woteki, Under Secretary, Research, Education, and Economics and Chief Scientist, USDA, opened by noting that USDA has incorporated the *Dietary Guidelines for Americans, 2010* into its programs to improve the diets and health of Americans. Four USDA agencies conduct research with the potential to contribute to the evidence base that the DGAC will examine.

The National Institute of Food and Agriculture (NIFA) is the research arm of USDA and funds research, education, and extension efforts that keep our foods safe, secure, and nutritious. The

Institute's nutrition education programs teach participants at all socioeconomic levels about the recommendations from the *Dietary Guidelines for Americans* and how they can incorporate these recommendations into their daily food choices.

The research that is conducted in the Agricultural Research Service (ARS) is a major contributor to the Dietary Reference Intakes (DRI). About half of the data that is used to set the DRIs by the Institute of Medicine is generated out of ARS research.

The dietary component of the National Health and Nutrition Examination Survey and USDA's Food and Nutrient Database for Dietary Studies provide food consumption and composition data. USDA's Center for Nutrition Policy and Promotion uses ARS's Food Patterns Equivalents Database to develop the USDA Food Patterns and MyPlate. ARS also maintains the National Nutrient Database for Standard Reference, along with other supplementary databases, which are used in research.

Both the USDA's National Agricultural Statistics Service and Economic Research Service (ERS) are involved in supporting the evidence base available for the DGAC to use. ERS studies economic and non-economic factors that influence food purchases. It also studies food safety and the cost of food-borne illness.

Dr. Woteki closed by noting the importance for the DGAC to identify gaps in the evidence base to inform USDA's future research directions.

Committee Operations

Dr. Richard Olson, Designated Federal Officer and Director, Division of Prevention Science, Office of Disease Prevention and Health Promotion, HHS, reviewed the operations of the DGAC in keeping with the Federal Advisory Committee Act (FACA) to ensure an open and transparent process.

As required by FACA, each public meeting will be announced in the *Federal Register* through a public notice. The DGAC is to advise and make recommendations to the government, but not to decide or implement Federal policy. Meetings of the full Committee are open to the public, and discussions that occur between meetings, such as those in topic-specific Subcommittees, will be brought back to the full Committee for deliberation at a public meeting.

Dr. Olson described how the Committee plans to operate, including the establishment of a Science Review Subcommittee that is comprised of the DGAC Chair, Vice Chair, and the two former 2010 Committee members serving on the 2015 Committee. They have organized the DGAC into Work Groups which will eventually be disbanded when the DGAC reorganizes Work Groups into Subcommittees.

The public is encouraged to provide written comments to the Committee through the on-line public comments database (found at <http://www.DietaryGuidelines.gov>). The public will have an opportunity to present brief oral testimony before the Committee at the second public DGAC meeting. The *Federal Register* notices of Committee meetings will provide a date by which written comments should be submitted to be considered for the next DGAC meeting. The public

will also have an opportunity to submit written comments as well as make public oral testimony to the Federal government in response to the release of the final DGAC Report.

Dr. Olson then turned the meeting over to Dr. Barbara Millen, Chair of the DGAC.

Chair Remarks and Review of Next Day's Agenda

Dr. Barbara Millen, Chair, Dietary Guidelines Advisory Committee, thanked the Committee members for agreeing to serve to review the current research and make recommendations to the government for their use in developing the *Dietary Guidelines for Americans, 2015*. She then reviewed the agenda for June 14, 2013.

Closing Remarks for Opening Session

Dr. Richard Olson, Designated Federal Officer and Director, Division of Prevention Science, Office of Disease Prevention and Health Promotion, HHS, thanked the speakers, the public attending in-person and via Web cast, and the Federal support staff and the DGAC for volunteering their time and adjourned the meeting.

(Meeting adjourned at 10:12 a.m.)

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Building 10, FAES Academic Center
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Bethesda, MD 20892

June 13-14, 2013

Day 2 Meeting Summary

Friday, June 14, 2013

(8:30 a.m.)

Participants

Dietary Guidelines Advisory Committee (DGAC): Dr. Barbara Millen (Chair), Dr. Alice H. Lichtenstein (Vice-Chair), Dr. Steven Abrams, Dr. Lucile Adams-Campbell, Dr. Cheryl Anderson, Dr. J. Thomas Brenna, Dr. Wayne Campbell, Dr. Steven Clinton, Dr. Gary Foster, Dr. Frank Hu, Dr. Miriam Nelson, Dr. Marian Neuhouser, Dr. Rafael Pérez-Escamilla, Dr. Anna Maria Siega-Riz, Dr. Mary Story

Co-Executive Secretaries: Dr. Richard Olson, Ms. Colette Rihane, Dr. Kellie Casavale, Dr. Shanthy Bowman

Others: Dr. Don Wright, Dr. Robert Post, Ms. Joanne Spahn, Ms. Alanna Moshfegh, Dr. Jill Reedy

Call to Order, Roll Call, and Opening Remarks

Dr. Richard Olson, Designated Federal Officer and Director, Division of Prevention Science, Office of Disease Prevention and Health Promotion, HHS, called the meeting to order at 8:30 a.m. Dr. Olson welcomed the Committee and participants, verified that all DGAC members were present and reviewed the agenda for the day. He then stressed the Charge of the Committee, which is to review the *Dietary Guidelines for Americans, 2010* and determine if there is new scientific evidence to support changes to current guidance or suggest new guidance. The Committee is to place the majority of their effort on the review of evidence since 2010. The emphasis of the Committee's work should be on food-based recommendations of public health importance for Americans. Dr. Olson made a special point to let the Committee know about two Federal efforts that are either forthcoming or underway. In 2018, HHS plans to develop the

second edition of the *Physical Activity Guidelines for Americans*, which was originally published in 2008. In addition, there is an effort currently underway, separate from the *Dietary Guidelines for Americans, 2015*, to develop dietary guidance for infants and toddlers from birth to 24 months of age for inclusion into the *Dietary Guidelines for Americans, 2020*.

The Committee has less than two-years to develop its Advisory Report that the government will use to develop the *Dietary Guidelines for Americans, 2015* policy document. A few guiding principles have been developed to elaborate on the Committee's Charge and assist with the review of the evidence. Dr. Olson stressed that prioritization of important issues early in the process will be necessary in order to complete all of the work that needs to be conducted in this short time frame. The three Work Groups that the Committee has been divided into are specifically addressing prioritization of topics and issues that the Committee may address as deliberations progress. More information about Work Group deliberations, leadership, and membership will be provided during the afternoon session.

The History and Current Use of the Dietary Guidelines in Public Policy

Dr. Robert Post, Associate Executive Director, Center for Nutrition Policy and Promotion, USDA, began his presentation by welcoming the Committee on behalf of USDA and noted the important task that the Committee has in front of it and how important its work is to Federal agencies to support programs, policies, and educational efforts. Dr. Post provided a depiction of Federal dietary guidance throughout the past 100 years, starting with USDA's publication of W.O. Atwater's food composition tables in the 1894 Farmer's Bulletin to USDA's Food Guide *Food for Young Children*, in 1916, to the current policy which is the *Dietary Guidelines for Americans, 2010*. Looking back at the food guidance that has been published, Dr. Post noted that dietary guidance and recommendations have evolved to keep pace with new research findings and changing patterns of food intake of the population and food composition. However, Dr. Post noted, that as our food system has become more complex, so has the communication environment, making it more and more challenging to grab consumers' attention with dietary guidance recommendations.

The *Dietary Guidelines for Americans* is Federal nutrition policy, established jointly by HHS and USDA, and are released every 5 years. This joint effort ensures that the Federal government speaks with one voice on nutrition issues. The *Guidelines* provide science-based advice for individuals ages 2 and older to help promote health and prevent chronic disease. They are used in Federal nutrition programs, nutrition education materials, and are a basis for nutrition research.

Dr. Post noted that before the 1970s, public health nutrition was primarily concerned with preventing nutritional deficiencies. As deficiencies became less common, diseases related to dietary excesses became the predominant concern. In 1977, the U.S. Senate Select Committee on Nutrition and Human Needs issued Dietary Goals for the United States. To support the credibility of the science used by the Committee, the Department of Agriculture and Department of Health, Education and Welfare (now HHS) convened scientists from the two Departments to develop the first edition of the *Dietary Guidelines*, which was issued in 1980. The document titled, "*Nutrition and Your Health: Dietary Guidelines for Americans*," was a brochure that described seven principles for a healthful diet to help Americans in making daily food decisions.

Although presented as straightforward extrapolations of the science base, the first edition of the *Guidelines* was met with controversy. Subsequently, Congressional Report language directed the two departments to convene an Advisory Committee to review the science and develop a report to help inform the development of the *Dietary Guidelines for Americans*. An Advisory Committee was formed and composed of experts outside of the Federal government, and it was helpful in the development of the *1985 Dietary Guidelines*. An Advisory Committee has been formed to review the science and draft a scientific report for every revision cycle since then. USDA and HHS use the Advisory Committee's report to establish the Federal *Dietary Guidelines for Americans* policy.

The 1980, 1985, and 1990 editions of the *Dietary Guidelines* were issued voluntarily by the two Departments. The 1990 National Nutrition Monitoring and Related Research Act mandated that the Secretaries of Agriculture and Health and Human Services jointly publish, every five years, a report entitled *Dietary Guidelines for Americans*. The *1995 Dietary Guidelines* was the first edition mandated by law. The *Dietary Guidelines* have been published on an ongoing basis at the appropriate intervals ever since. Over time the editions of the *Guidelines* have become more comprehensive and reflected new methods of reviewing and communicating dietary guidance to the public.

Dr. Post noted that the first phase in revising the *Dietary Guidelines for Americans* is the establishment of an Advisory Committee. The next phase is the development of the Advisory Committee Report. Dr. Post noted that the public will have an opportunity to provide comments to the Committee as it deliberates and will also have the opportunity to provide comments on the Advisory Committee's Report once it is submitted. After the Committee submits its report to the Secretaries of Health and Human Services and Agriculture, its work is completed. The third phase is the development of the *Dietary Guidelines for Americans* policy document and finally implementation of the *Dietary Guidelines* recommendations throughout the Federal government.

Throughout the past three decades the method used to evaluate the science base has evolved to ensure the quality, objectivity, utility and integrity of the information used to form the basis of the *Dietary Guidelines*. Dr. Post noted that many strategies used to develop the 2010 DGAC Report will be available to this Advisory Committee too. These strategies include (1) the use of USDA's Nutrition Evidence Library to conduct systematic reviews, (2) access to food pattern modeling work performed at CNPP, (3) data analyses from various Federal agencies, and (4) review and synthesis of other evidenced-based systematic reviews that may be available.

Within USDA the *Dietary Guidelines* is used by hundreds of programs across the Department. The Following were highlighted by Dr. Post.

- ***Food and Nutrition Services***: Use the *Guidelines* to develop policy, nutrition standards and nutrition education materials for its programs. These include the National School Lunch and Breakfast Programs; Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); and the Supplemental Nutrition Assistance Program (SNAP), to name a few. The Healthy Hunger-Free Kids Act, signed into law by the President in December 2010, authorized the Agency to make important dietary improvements, based on the *Dietary Guidelines for Americans, 2010*, to the National School Lunch and School Breakfast Programs.

- ***National Institute of Food and Agriculture:*** Provides national leadership for community-based nutrition programs and sponsors nutrition-related research, education, and extension programs. The *Dietary Guidelines* is used for strategic planning, creating research and grant opportunities, delivering educational messages, evaluating program effectiveness, and assessing its nutrition portfolio of programs.
- ***Economic Research Service:*** Conducts policy-oriented research on the food supply and uses the *Dietary Guidelines* as the standard for comparisons of consumer food choices.
- ***Agriculture Marketing Service:*** Uses the *Dietary Guidelines* to guide decisions on purchasing products for nutrition assistance programs like the National School Lunch and Breakfast Programs, setting specifications for products purchased, and overseeing commodity board research and promotion programs.
- ***Food Safety and Inspection Service:*** Educates consumers about the importance of safe food handling and how to reduce risk of foodborne illness. The *Dietary Guidelines* food safety recommendations are highlighted throughout its portfolio of consumer education programs.
- ***Agricultural Research Service:*** Conducts high-priority national research to help define the role of food and its components in optimizing health throughout the life cycle. The agency monitors food composition and dietary intake of Americans that is fundamental for developing dietary guidance.
- ***Center for Nutrition Policy and Promotion:*** Is USDA’s focal agency that sets national nutrition policy by developing and promoting dietary guidance that links the latest evidence-based science to the nutrition needs of consumers. The Center uses the *Dietary Guidelines* to develop the USDA Food Plans and the Healthy Eating Index. The *Dietary Guidelines* is also the basis for a robust communication initiative that uses MyPlate, a powerful visual cue, to remind consumers to make healthful food decisions where they shop, play, learn, and receive health care.

Dr. Post concluded his presentation by lending his support to the Committee and encouraging them to look for opportunities within the current *Dietary Guidelines* that are ripe for evaluation. Examples for evaluation included dietary patterns and the benefits of snacks or breakfast, eating occasions, and family dynamics, and viewing recommendations through the lens of the lifespan, particularly as they might relate to adolescents and older Americans. The Committee may also want to consider ways to craft and bridge recommendations beyond quantitative information with information that is based on interventions in order to create the “how-to” guidance associated with those recommendations.

Dr. Don Wright, Deputy Assistant Secretary for Health, Office of Disease Prevention and Health Promotion, HHS, began his remarks by thanking Dr. Post for a very comprehensive historical perspective on the *Dietary Guidelines*. He noted that the *Dietary Guidelines* has served as the framework for so many of the programs, initiatives, and communication messaging that we do in HHS and in USDA. He said that he thought it would be beneficial for everyone to hear a variety of ways that HHS uses the *Guidelines*:

- **Office of the Surgeon General:** In 2010, the Affordable Care Act created the National Prevention Council, led by the Surgeon General, to guide our nation in finding the most effective and achievable means for improving health and well-being. The Council's National Prevention Strategy was released in 2011 and positions the *Dietary Guidelines* as the science-based prevention and health promotion policy outlining what it means to eat healthy.
- **Administration for Community Living:** All nutrition programs offered by the Administration for Community Living (formally the Administration on Aging) are required to meet the *Dietary Guidelines* recommendations. This includes the Older Americans Nutrition Program, which provides meals to older adults through the Congregate Nutrition Services, Home-Delivered Nutrition Services, and the Nutrition Services Incentive Program.
- **Centers for Disease Control and Prevention:** CDC conducts the National Health and Nutrition Examination Survey (NHANES) which monitors national food and nutritional intakes in the U.S. CDC is also involved in a variety of efforts that rely on the *Dietary Guidelines* recommendations, including the Fruits & Veggies More Matters initiative, which is focused on one of the key messages from the *2010 Dietary Guidelines*—make half your plate fruits and vegetables.
- **Food and Drug Administration:** The Food and Drug Administration relies on the *Dietary Guidelines* to inform their regulation of the Nutrition Facts label. The FDA also uses the *Dietary Guidelines* recommendations to support their educational programs related to the Nutrition Facts label, food safety, and foodborne illness.
- **Health Resources and Services Administration:** Bright Futures is a national health promotion and disease prevention initiative that aims to improve and maintain the health of all children and adolescents with a focus on families and communities.
- **Indian Health Service:** The Indian Health Service has created specific resources for their communities that focus on creating a healthy lifestyle consistent with the *Dietary Guidelines* while incorporating traditional beliefs and practices. These include Strengthen the Family Circle and Honoring the Gift of Children, which incorporate personal stories from Indian communities about healthy behaviors and lifestyles, and provide tips and resources for healthy eating and physical activity.
- **National Institutes of Health:** The National Heart Lung, and Blood Institute (NHLBI) at NIH promotes nutrition messages based on the *Dietary Guidelines* through a variety of projects, including *We Can!* (Ways to Enhance Children's Activity & Nutrition), which provides resources for parents and caregivers to help children ages 8-13 reach and maintain a healthy weight. NHLBI is also involved in initiatives to support other concepts from the *Dietary Guidelines* such as the DASH Eating Plan and portion control.
- **Office on Women's Health:** The Office on Women's Health administers the BodyWorks program, which promotes positive behavioral changes in female adolescents. The program was designed to help parents and caregivers of adolescents improve family

eating and activity habits, and supports the key recommendations from the *Dietary Guidelines*.

- ***President’s Council on Fitness, Sports, and Nutrition:*** The President’s Council on Fitness, Sports and Nutrition created the PALA+ program—a 6-week program focused on healthy eating and increasing physical activity through weekly goal setting to meet the key recommendations from the *Dietary Guidelines* and the *Physical Activity Guidelines for Americans*. The President’s Council also recently released the second phase of their *I Can Do It, You Can Do It* initiative focusing on inclusionary physical activity for adults and children with disabilities.
- ***Office of Disease Prevention and Health Promotion:*** The Office of Disease Prevention and Health Promotion (ODPHP) leads, develops and coordinates disease prevention and health promotion activities, programs, policies, and information across agencies within HHS. By aligning public health policy, science, and communication, ODPHP makes it possible for the HHS Secretary, and often the President, to speak with a single voice on preventing disease and promoting health. ODPHP is comprised of 4 Divisions: Prevention Science; Health Communication and eHealth; Healthcare Quality; and Community Strategies.

Dr. Wright provided a brief overview of the Division within ODPHP involved with the *Dietary Guidelines*. The Division of Prevention Science focuses on the physical and nutritional health of our nation. In addition to training tools and education, the two primary projects that ODPHP spearheads are the *Dietary Guidelines for Americans* and the *Physical Activity Guidelines for Americans*. The Community Strategies Division is responsible for the development, implementation, and tracking of Healthy People. Healthy People is the set of 10-year national objectives that has been evolving since 1979 with a focus for improving the health of all Americans. The Nutrition and Weight Status Topic Area contains objectives directly aligned with the *Dietary Guidelines for Americans*. The Health Communication and eHealth Division provides leadership on health literacy and digital public health and eHealth learning best practices. This Division also administers <http://www.Healthfinder.gov>, which provides user-tested, easy-to-understand, actionable information on prevention and wellness topics based on the most up-to-date scientific evidence, including the *Dietary Guidelines* recommendations.

Dr. Wright emphasized that he hopes the Committee can see the wide breadth of activities, programs, initiatives, and educational campaigns that really rely on the work that the Committee does. He also thanked them for taking time out of their busy schedules and sharing their technical expertise. He specifically thanked Dr. Miriam Nelson for her past and current participation with the *Dietary Guidelines*, the HHS *Physical Activity Guidelines*, and her recent participation with the HHS *Physical Activity Midcourse Report*.

Dr. Wright closed with remarks about the strong sense of collaboration between HHS and USDA and that he and Dr. Post agree the interaction between HHS and USDA is a model for trans-departmental collaboration.

The Topic Selection Process

Ms. Colette Rihane, Co-Executive Secretary and Director, Nutrition Guidance Analysis Division, Center for Nutrition Policy and Promotion, USDA, reiterated the scope of the *Dietary Guidelines*—to address food and nutrition issues that will inform public health action to promote population health or wellbeing and to reduce the significant burden of avoidable disease in the U.S. population as a whole or in large population subgroups. Ms. Rihane explained that the DGAC will be focusing on food groups, foods and beverages within the food groups, dietary patterns, and the amounts and combinations of foods and beverages that should be consumed to promote health and help prevent disease. Ms. Rihane emphasized that nutrients may be considered, but the recommendations of the *Dietary Guidelines* are intended to provide food-based guidance that complement the Dietary Reference Intakes and that changes to the DRIs are out of the scope for the Committee. Potential topics can include nutrients of public health concern in which intakes may be too low or too high and which could provide guidance on implementation of the DRIs in the USDA food patterns. Topics may also include social, behavioral, and environmental factors that may improve dietary compliance, intake, or calorie balance and principles that ensure food safety.

Ms. Rihane indicated that the target population for the *Dietary Guidelines* is the general U.S. population ages two years and older. The age span from birth to 24 months is being addressed separately and is considering topics such as breastfeeding, formula feeding, and the introduction of foods, and their relationship with infant and toddler outcomes. The scope of the *Dietary Guidelines* includes maternal intake—dietary intake during pregnancy, postpartum, and breastfeeding relating to maternal health and pregnancy outcomes—as well as Americans at risk for nutrition-related chronic disease or specific nutritional risk, including older adults and those of low socioeconomic status.

Ms. Rihane discussed that the topics to be considered should have the potential to impact one or more food and nutrition-related health outcome of public health concern. These outcomes include body weight status, cardiovascular disease, cancer, type 2 diabetes, bone health, and the prevention of foodborne illness, as well as diet-related outcomes relevant to social, behavior, and environmental topics; intakes of foods and food groups, dietary patterns, nutrients of public health concern, diet quality, and dietary behaviors. Ms. Rihane also explained that when selecting topics, the DGAC should consider the likelihood of a review of the topic to potentially inform dietary guidance. A review of the current evidence on a topic may inform the development of new dietary guidance, result in a change or elaboration of existing recommendations, or result in recognition of a knowledge gap in addressing an important controversy or dilemma in public health nutrition or address a common practice for which there is currently no government guidance.

Dr. Kellie Casavale, Co-Executive Secretary and Nutrition Advisor, Division of Prevention Science, Office of Disease Prevention and Health Promotion, HHS, mentioned that she was formerly Kellie O’Connell and worked for the USDA during the *2010 Dietary Guidelines* process. Dr. Casavale explained the process planned for developing topics to be addressed by the DGAC. The Scientific Review Subcommittee is composed of four Committee members, including the Chair, Dr. Barbara Millen, the Vice-Chair, Dr. Alice H. Lichtenstein, and two

members from the *2010 Dietary Guidelines*, Drs. Miriam Nelson and Rafael Pérez -Escamilla. The first task was to develop Work Groups in order to develop topics and scientific questions.

Dr. Casavale described that the process is a step forward from the process used in the past. The goals of the process are being presented to help the Committee prioritize their topics and questions early in their work, and to allow Subcommittees to be staffed effectively to support the workload.

Dr. Casavale reviewed that there are three Work Groups and each Work Group will create a collective set of prioritized questions. Then the Science Review Subcommittee will organize the questions into sets and develop a preliminary Subcommittee structure. The first step of each Work Group is to discuss topic areas, then identify the scientific questions for topic areas. Dr. Casavale stated that a tiered approach will be used—tier one, tier two, and tier three—to prioritize questions based on public health significance and the likelihood of affecting policy.

Although it is unclear how many Subcommittees there will be, at the next public meeting the DGAC will discuss Subcommittee organization and their prioritized questions; thereafter, the Subcommittees will begin their work at a deeper level. Subcommittees will answer questions through systematic reviews, data analyses, and food pattern modeling with the support of Federal staff. Questions may also be answered through existing high-quality reports, either through all or part of a report, and the reports may fully or partially answer a question.

Dr. Casavale concluded that written comments are received from the public throughout the DGAC's work and that comments from the public can bring to light new issues, new approaches to issues, and emerging evidence. She encouraged the public to submit comments for the DGAC's consideration.

The USDA-CNPP Nutrition Evidence Library

Ms. Joanne Spahn, Director, Evidence Analysis Library Division, Center for Nutrition Policy and Promotion, USDA, provided an overview of the Nutrition Evidence Library (NEL), which specializes in conducting systematic reviews to inform nutrition policy and programs. The inaugural project for the NEL was supporting the development of the *Dietary Guidelines for Americans, 2010*, which enabled the government to meet the Data Quality Act requirements. Since then, the NEL has made several modifications and improvements based on recommendations from the previous DGAC, the 2011 Institute of Medicine report that identified standards for systematic reviews of comparative effectiveness research, and the Division's experience over recent years in conducting systematic reviews in the areas of nutrition, education, and dietary patterns. The NEL is also involved with the development of systematic review topics and questions for a separate initiative to develop dietary guidance recommendations for infants and toddlers from birth to 24 months of age for inclusion into the *Dietary Guidelines for Americans, 2020*.

The NEL uses a state-of-the-art methodology for evaluating scientific evidence to answer precise questions based on predefined approaches and criteria. Meticulous methods and electronic tools are used to describe and document each step to ensure objectivity, transparency, and reproducibility of the process. The six-step process includes: 1) systematic review question

development; 2) literature search, screening, and selection; 3) data extraction and quality assessment; 4) describing the evidence and evidence synthesis; 5) conclusion statements and grading the evidence, and 6) research recommendations and technical abstracts.

Substantive work is completed by the DGAC. The Committee develops the questions and identifies the criteria that guide the review of the literature. The development of the research questions is a final step of the process. The NEL staff assists and supports the Committee based on their requests.

Most systematic reviews are targeted at a certain topic area, but the broad nature of the *Dietary Guidelines* creates a challenge for the Committee because they have to cover numerous topics. The development of optimal systematic review questions takes time and deliberation to ensure that the most relevant topics are addressed and that the questions are clearly focused and appropriate in scope. The question development process will begin in the Work Groups as members evaluate what topics need to be reviewed. The Work Groups will start to develop the protocols to guide the question development by identifying the populations of interest, the outcomes of interest, settings, and other relevant factors. Once the questions are developed, the NEL will assist the Subcommittees with the literature search, screening, and selection processes.

DGAC Discussion on Topic Formation and Review of the Evidence

Dr. Olson, Designated Federal Officer, presided over a discussion session with Committee members. Members provided comments and asked questions concerning the topic selection, prioritization, evidence analysis, and related activities.

Dr. Pérez -Escamilla asked about timing of Subcommittee formation. Dr. Casavale responded that the Science Review Subcommittee will develop a preliminary outline for the Subcommittees for discussion with the full Committee during the second meeting. The Subcommittees and rosters will be finalized shortly thereafter, and the information will be posted online at <http://www.DietaryGuidelines.gov>.

Dr. Story requested a brief description of the timeline for completion of the systematic reviews. Dr. Casavale responded that the reviews would begin after the second Committee meeting once the Subcommittees are formed and the details of the systematic reviews are clearly identified. Ms. Spahn added that the first few months of the process are devoted to identifying the topics and developing the questions and the protocols to review the science. The vision is that during the second meeting, there will be discussion, prioritization, and decisions made regarding the list of questions to be researched using the systematic review protocol. Reporting on the evidence review will begin at the third full Committee meeting. Dr. Casavale reiterated that a total of five public DGAC meetings are planned. During the fourth meeting, the Subcommittees will discuss the conclusions for their report. The Subcommittees will present their report chapters at the fifth meeting.

Dr. Anderson asked a question about dietary patterns and eating occasions. Dr. Post reiterated a point he made during his presentation that these topics are potential topics for the Committee's consideration. Healthy eating patterns are a topic of great interest particularly as they relate to

lifespan needs, segments of a lifespan, and related topics in terms of applying the *Dietary Guidelines*. He added that there may be gaps and opportunities for additional work in this area.

Dr. Campbell asked for clarification regarding who is responsible for the interpretation of the evidence summaries. Ms. Spahn stated that the analysis of the evidence is completed entirely by the Committee. Additionally, the Committee develops the protocols for the reviews including the criteria for the literature searches and data elements that should be extracted.

Dr. Hu asked about the number of systematic reviews or meta-analyses that are feasible to complete given the limited timeframe. Ms. Spahn stated that it is difficult to provide a precise number, because it will depend on the complexity of the topics and the criteria specified for each of the literature reviews. Dr. Pérez -Escamilla agreed with Ms. Spahn's remarks and requested confirmation that the Committee can request an update to a systematic review that was completed for the previous Committee as a means of expediting the review process. Ms. Spahn confirmed this and reiterated that the Charge to the Committee is to look at the most current evidence. Thus, earlier systematic reviews completed by the NEL or others can serve as a starting point. Dr. Nelson commented on her experience with the 2010 Committee, adding that the initial set of questions became a larger number once the Committee explored the complexities of the topics and the available evidence. She added that it is important to prioritize the questions and determine the appropriate evidence review start dates for each of the questions.

Dr. Foster asked for clarification regarding the refinement of the research questions. Ms. Spahn responded that over the coming weeks the Work Groups will develop preliminary questions. The Science Review Subcommittee will inform this process. A list of developed and prioritized questions will be presented at the second public DGAC meeting.

Dr. Hu requested a list of the questions proposed by the previous Committee and those that underwent systematic evidence review as a means of informing the question development and updates. Ms. Spahn indicated that this information will be provided to the Committee.

The State of the American Diet

Ms. Alanna Moshfegh, Research Leader, Food Surveys Research Group, Agricultural Research Service, USDA, presented a brief overview of national dietary data available from National Health and Nutrition Examination Survey (NHANES), specifically in the report, "What We Eat in America," and presented selected results that provided insight on the state of the American diet.

Ms. Moshfegh described that NHANES became a continuous ongoing survey in 1999, which is conducted by the National Center for Health Statistics in HHS. Each year, NHANES collects data on about 5,000 individuals of all ages that are released on two-year cycles. USDA is responsible for the dietary intake portion of this survey known as "What We Eat in America." She gave a brief review of the dietary data collection for the two 24-hour recalls using the USDA Automated Multiple Pass Method (AMPM). The first 24-hour recall is conducted in a mobile exam center and the second recall is by telephone, three to 10 days later. The AMPM method has been validated, including for energy and for sodium.

Ms. Moshfegh next presented results from NHANES 2009-10 and, when possible, compared the results to previous years. She noted that they are currently processing 2011-12 data, but the results will not be ready until summer 2014, which may be too late for the Committee's deliberations. Energy intake for all individuals (two years and above) has increased about 150 calories per day from 1977-78 to 1994-98, and there is about a 50 calories per day increase in the past decade (up to 2009-10). Current data shows that mean energy intake for adult males and females is about 2500 and 1800 calories, respectively.

About two-thirds of the population reported having breakfast, lunch, and dinner. About a third reported having any two of those three meals, and 5 percent only one. Although lunch was reported by 80 percent of the population, it was the least reported. Americans who are young, white, and those of the highest income status were most likely to report having lunch. It was reported that about a third of calories comes from dinner, followed equally by a fourth coming from lunch and snacks, while 17 percent comes from breakfast. Compared to the late 1970s, the proportion of energy from snacks has doubled in 2009-10. In the late 1970s, 40 percent of Americans were reporting no snacks on any given day compared to 4 percent in 2009-10. Today the majority of Americans are having at least three or more snacks per day, while 16 percent reported having five or more snacks per day.

About a third of the population's energy currently comes from food eaten away from home, which is double the proportion of the late 1970s (about 17 percent). Food at home can also come from a restaurant or from a fast food venue. About 13 and 9 percent of the energy comes from fast foods and from restaurants, respectively. Currently, about 20 percent of the energy comes from beverages, compared to 16 percent in the late 1970s.

Ms. Moshfegh next explained a new application developed by ARS known as the What We Eat in America Food Categories for analyzing foods and beverages as consumed in the American diet. This application groups about 8,000 foods and beverages into 150 unique categories (about 36 of them are beverages) and looks at the intake of discrete food items (e.g., pizza) without further disaggregation (e.g., grains, cheese, tomatoes). Using this application, she described the percent of individuals, who reported at least one or more foods in six broad food groups. In 2009-10, the majority of Americans reported grains, protein foods, snacks/sweets, mixed dishes, and vegetables; less than half of Americans reported a fruit (excluding 100 percent fruit juice or juice in fruit drinks). Data showed that there was an increase in the percent of Americans reporting a fruit in 2009-10 compared to 2001-02. In 2009-10 the top fruits reported were bananas, followed by apples, oranges, grapes, and strawberries. While the top vegetables reported were potatoes, followed by lettuce, tomatoes, carrots, and corn. In 2009-10, teens, blacks, and those in the lowest income category were least likely to report a fruit. However, compared to 2001-02, fruit intake has increased in various demographic groups, particularly for very young children.

About 20 percent of mean daily energy comes from mixed dishes, 16 percent each from snacks/sweets and protein foods, while 14, 5 and 3 percent come from grains, vegetables, and fruits, respectively. Ms. Moshfegh explained which foods contributed to energy intake within each of the bigger groups. In the mixed dishes, about 8 percent comes from meat, poultry, and seafood and grain-based mixed dishes (e.g., pasta-type products). About 2 to 4 percent of the energy comes from pizza, Mexican and Asian mixed dishes, sandwiches, and soups. For

snacks/sweets, about 7 and 5 percent of energy comes from cakes, cookies, donuts, and snack bars, and from chips (potato, tortilla), popcorn, pretzels, and crackers, respectively. For protein foods, about 1 to 4 percent of energy comes from poultry, cured meats/poultry, plant-based protein foods (the majority are nuts and seeds, as well as dried beans and dried peas or legumes), eggs, beef, and pork. For grains, about 8 percent of the energy comes from breads, bagels, and tortillas, while about 1 to 3 percent of energy comes from cereals (ready-to-eat and cooked), quick breads and other bread products (e.g., waffles and pancakes), and cooked grains.

Six categories of beverages were reported: milk, coffee/tea, sweetened beverages (including soft drinks, fruit drinks, and energy drinks), 100 percent fruit juice, alcoholic beverages, and diet beverages. In 2009-10, more than half of Americans reported milk or coffee/tea and close to half reported sweetened beverages. Compared to 2001-02, there were fewer individuals reporting sweetened beverages or milk in 2009-10. Eighty percent of respondents reported water and the majority was plain water. However, some reported flavored water as well as enhanced waters with various nutrients in it. About 6, 5, 4, 2 and 1 percent of mean daily energy intakes came from sweetened beverages, milk, alcoholic beverages, juice, and coffee/tea, respectively. Ms. Moshfegh then explained which beverages are contributing to energy intake within each of the bigger groups. In the sweetened beverages group, about two-thirds of the 6 percent of energy comes from soft drinks and a third comes from fruit drinks and sports and energy drinks. Milk is equally divided by whole, reduced, low-fat, nonfat, and flavored milks with about 1 percent of energy from each.

The data on percent of Americans with usual intakes below the estimated average requirement (EAR) were presented. The majority of Americans were falling below their EAR for vitamin D and vitamin E. For magnesium, calcium, and vitamins A and C, the percent below the EAR was between about 37 to 49 percent. About 37 percent of the entire population was below the EAR for vitamin C. Around 10 percent of the population was below the EAR for zinc, vitamin B₆, and folate. About 6 percent of the population fell below their EAR for protein, carbohydrate, thiamin, riboflavin, niacin, vitamin B₁₂, iron, phosphorus, selenium, and copper. For example, 42 percent of all individuals and about three-fourths of adolescent and teen girls fell below their EAR for calcium. Meanwhile, about 70 to 80 percent of older women (50 years and above) had calcium below their EAR.

Dietary supplement data collection in NHANES was briefly described. Through a questionnaire, the survey asks about dietary supplement use over the past 30 days, including the type and amount of each dietary supplement consumed in that particular day. About a third of individuals reported use of dietary supplements, while young children and older individuals reported higher supplement use on any one day. Females reported more supplements than males (e.g., calcium). The mean intake of calcium from supplements among the entire population was about 130 milligrams, while the mean intake of calcium from foods and beverages was about 1,000 milligrams.

Ms. Moshfegh mentioned that additional data is on the Food Surveys Research Group website (<http://www.ars.usda.gov/ba/bhnrc/fsrg>) and they are ready to assist the Committee in any way with data analysis.

Dr. Jill Reedy, Program Director, Risk Factor Monitoring and Methods Branch, National Cancer Institute, HHS, presented on the state of the American diet based data that were analyzed for the 2010 Committee. She provided methods, examples, and recent developments.

The analyses on the American diet involve the two broad questions: “How is the American population eating relative to dietary recommendations?” and “What is the population eating relative to recommendations?” These data analyses contributed to unique aspects of the *2010 Guidelines*. Dr. Reedy noted that this was the first time that the recommendations were framed in reference to population intakes. For example, recommendations for foods and nutrients to increase and the foods and food components to reduce were made in the context of current intakes. The *2010 Guidelines* also addressed food access and food environment.

Dr. Reedy discussed that the dietary data collected in NHANES and “What We Eat in America” are coded into a set of about 8,000 food codes, and can be characterized into nutrient composition or disaggregated into guidance-based food groups. This approach disaggregates the ingredients in each food into the different guidance-based food groups. For example, milk in yogurt would contribute towards milk cup-equivalents, while the fat would contribute towards grams of solid fat. Another way to look at this data is to aggregate or group them, into as-eaten categories, which is known as the food categories approach.

Dr. Reedy explained that in order to estimate the nutrients, the NHANES data is linked to the Food and Nutrient Database for Dietary Studies, which has over 140 nutrients. For estimating the guidance-based food groups, the NHANES data is linked to MyPyramid Equivalents Database (MPED), which has over 30 different guidance-based food groups (e.g., whole grains, added sugars). She noted that MPED will be called the Food Patterns Equivalents Database when the next update is released with the 2009-10 data.

There were about 100 different National Cancer Institute (NCI) food categories that were used for the *2010 Dietary Guidelines*. As mentioned by Ms. Moshfegh, USDA has about 150 food categories, which is a slightly different approach, but NCI is moving forward to keep their categories similar to USDA’s.

Dr. Reedy explained that in order to address the question, “How is the American population eating relative to dietary recommendations?” one has to be able to look at the proportion of the population above or below the recommendations, and this should be based on estimating usual intake distributions. Most individuals do not eat the same food every day; therefore, 24-hour recall provides a snapshot in time. The concept of usual intake is important, because the recommendations are intended to be met over time.

Dr. Reedy highlighted examples with fruit and calories from solid fats and added sugars (i.e., calories from SoFAS). Americans consume only 42 percent of the goal for fruit. The usual intake distributions for fruit intake for females ages 9 to 13 years showed that few met or exceeded the recommended amount (one and one-half cup-equivalents). Between 75 and 90 percent of this age group are not meeting the recommendation.

The recommended limit of SoFAS for children 2 to 3 years old is less than 200 calories. The mean intake for calories from solid fats and added sugars is significantly above the limit (280

percent) for the entire population. The usual intake distribution of children ages 2 to 3 and 4 to 8 years were reported as an example. All children 2 to 8 years old were exceeding their limit. Children 2 to 3 years old at the 5th percentiles were consuming over 300 calories from SoFAS, which increases to over 800 calories in the 99th percentile.

Dr. Reedy explained that in order to answer the question “What is the population eating relative to recommendations?” one has to be able to identify what foods contribute to energy and food group intake and to estimate the top food sources using food categories. She stated that food codes representing similar foods were combined into mutually exclusive food categories to provide an indication of the contribution of foods as-eaten to the intake of the dietary component being studied. Rankings depend in part on how ubiquitously the specific food is consumed. Foods that are the richest sources of nutrients or food components are not necessarily the major contributors, and some foods that are very commonly consumed in the population will result in a significant contribution to total intake even if not particularly high in a nutrient or food component.

A pie chart from the *Dietary Guidelines for Americans, 2010* illustrated the sources of added sugars in the diets of the population over 2 years of age. The top three sources were soda, grain-based desserts, and fruit drinks. About seven and a half teaspoons of added sugars per person per day comes from sodas. This is about 120 calories per person per day.

Dr. Reedy discussed recent developments of the disparities in diet in relation to income and race/ethnicity in the U.S. Some recent analyses were conducted investigating the top food sources and usual intake distributions for the different food groups and food components by income and race/ethnicity. She discussed NCI’s work related to dietary patterns research, and such a framework reflects the importance of the multidimensionality of diet. Much of the dietary patterns work at NCI has focused on index-based dietary patterns or diet quality indexes, because this method attempts to address the multicollinearity of dietary components and can be translated based on dietary recommendations. She gave the Healthy Eating Index (HEI-2010) as an example, which reflects conformance with the *2010 Dietary Guidelines*. The standards are based on a density basis; each component is per 1000 calories. The HEI score can be relevant for individual-level diets as well as community- and macro-level food environments.

The HEI-2010 has 12 components. Nine address dietary adequacy (Total Fruit, Whole Fruit, Total Vegetables, Greens and Beans, Whole Grains, Dairy, Total Protein, Seafood and Plant Protein, Fatty Acids) for which a higher score reflects higher intakes. A higher score for the three remaining moderation components (Refined Grains, Sodium, and Empty Calories) indicates lower intakes. The total HEI-2010 score of the U.S. population 2 years and older from NHANES 2007-08 data is 54 points out of 100, which indicates a poor index score.

The analyses that NCI provided for the 2010 Committee focused on population intakes, but a key theme of NCI’s work involves moving beyond individual behaviors to examining the food stream as a whole, including the national food supply, food processing, the community food environment, and how that stream filters down towards the individual. Currently, researchers at NCI are analyzing HEI-2010 scores at the community- and macro-levels by examining fast food restaurants and trends in the U.S. food supply using loss-adjusted food supply data from 1970 to 2010.

The diet quality of the food supply has shown very little improvement from 1970 to 2010. In keeping with the broader context, Dr. Reedy used a figure to illustrate the different levels, moving from farm to fork, to describe considerations of food waste and other factors that are related to efforts relevant to achieving a sustainable and ecologically responsible food system, as well as how we might measure or examine that.

Dr. Reedy stated that the 2010 Committee also conducted analyses targeting children, looking at differences among age/sex groups.

NCI has efforts underway looking at dietary patterns with a systematic comparison between four different key diet quality indices, including the HEI-2010, and how each is associated with mortality in several different large U.S. cohorts.

Dr. Reedy concluded that providing these examples illustrates that these kinds of methods and analyses could help contribute to the work of the current Committee, and that measures and methods can be adapted depending on the Committee's questions of interest and, in particular, what is feasible based on the data available.

Discussion of the State of the American Diet Presentations

Dr. Campbell asked what the basis for the *Dietary Guidelines* recommendations are when answering "How is the U.S. population eating relative to dietary recommendations?" Dr. Reedy responded that it is based on the *Dietary Guidelines* and the food patterns in them developed by Dr. Trish Britten (CNPP, USDA) that are specific to recommendations for each age/sex group.

Dr. Campbell asked whether the recommendations are related to DRIs and if there are any discrepancies between the *Dietary Guidelines* food group recommendations relative to the DRIs, and, if so, how the disparities in quantities consumed to meet recommendations are handled. He noted that the Committee is charged to specifically not evaluate the DRIs, but if the DRIs are the foundation for the recommendations, clarification on the Committee's starting point of the recommendation would be helpful. Dr. Britten responded that, in general, the food patterns are designed to meet both the *Dietary Guidelines* and DRIs, with a couple of exceptions. The food groups are composed of foods with multiple nutrients, and there is no food group that only looks at a single nutrient. Therefore, there may be more protein in the total patterns than is necessary to meet the RDA, for example. However, it is also within the AMDR range.

There are DRIs that the food patterns, as typically consumed by Americans, do not meet. She gave the examples of vitamins E and D (presented by Ms. Moshfegh) where, even if a person makes the choices in a nutritious way from various food groups, they will not meet those recommendations. She noted that this is something for the Committee to consider and make comments regarding whether or not there should be efforts to modify the food-based recommendations to change the nutrient profile of the diet.

Dr. Lichtenstein asked whether there will be any mechanism for trying to capture the contribution of fortified foods. Ms. Moshfegh responded that some analysis has been done looking at contributions of nutrients from foods and beverages as well from fortified foods. If needed, ARS can complete work in this area at the request of the Committee.

Dr. Hu asked what the vegetable consumption of the general population would be if potatoes (e.g., French fries) were taken out of the vegetable group. Ms. Moshfegh responded that this analysis has been done and ARS can provide data for vegetable consumption including and excluding potatoes. She noted that the potatoes account for the majority of the vegetables that are consumed.

Dr. Anderson asked whether there are potential shifts in methodology that might be accounting for changes in energy intake. Ms. Moshfegh responded yes, there are. She noted that the methodology for collecting dietary recalls is extremely good, but certainly still has room for improvement. She also mentioned that the 1970s was a much simpler time and the food choices were fewer compared to today.

Dr. Anderson also asked if changes in weight across those time periods (presented by Ms. Moshfegh) could be evaluated further. Ms. Moshfegh said they can provide that information.

Dr. Anderson asked whether the data on vitamin D intake (presented by Ms. Moshfegh) included dietary supplements. Ms. Moshfegh responded that it did not include dietary supplements, only foods and beverages.

Dr. Neuhouser asked the extent to which the proportion of the population (as a whole and as subgroups) is taking more than one supplement can be determined. Ms. Moshfegh responded that ARS can identify the proportion of individuals that are taking one, two, three, or any number of supplements.

Dr. Neuhouser asked how much detail is obtained on each supplement product in terms of ingredients. Ms. Moshfegh responded that extensive and specific detail is obtained about each and every dietary supplement that is used.

Dr. Story asked whether Dr. Reedy could talk about her ideas on evaluating the food stream using the HEI-2010 score. Dr. Reedy responded that NCI has looked at the food supply level and fast food restaurants. She mentioned that one of the challenges is the availability of databases. It is possible to look at a fast food restaurant because it is food as-eaten. However, in obtaining the HEI-2010 score of a neighborhood convenience store, a large market, or even a food cart, the foods available may not be ready-to-eat, which creates challenges in coding the analysis. NCI is now working with researchers who are looking at HEI-2010 scores of food banks and many other outlets within the community.

Dr. Hu asked which indexes mentioned during Dr. Reedy's presentation are being compared. Dr. Reedy responded the HEI-2010, Alternate Healthy Eating Index, Mediterranean Diet score, and DASH scores. Dr. Hu asked where those analyses stand and whether they will be available for the Committee to use. Dr. Reedy responded that their goal is to publish them in the literature by the end of the summer so that they are available for the Committee's consideration.

Dr. Millen asked what the most recent data were that would be available to the 2010 Committee and what opportunities exist for using updated data for this Committee. Dr. Reedy responded that the data for usual intake distributions was from 2001-04 and the top food sources data came from 2005-06. She explained that the NHANES data will be available for specific nutrients for 2009-10. However, the MyPyramid Equivalents database takes a little longer to be released. The

reason she did not present any new data on guidance-based food groups is because the 2009-10 Food Patterns Equivalents Database will be released later this fall. At that point, analyses could be updated through 2009-10 for the Committee to consider.

Dr. Siega-Riz asked whether sun exposure was taken into consideration when reporting vitamin D. Ms. Moshfegh responded the data presented was from food and beverage intake only; sun exposure was not taken into consideration.

Dr. Neuhouser asked Ms. Moshfegh whether ARS has locations of food consumption for sugar-sweetened beverages, certain age groups such as younger children or teenagers, as well as sweets, candies, and cookies. Ms. Moshfegh responded that for every food and beverage reported they ask, “Did you eat it at home or away from home?” They also ask “Where did you get the food or beverage from?” There are close to 30 different response options such as fast food, grocery store, restaurant, school cafeteria, gift from someone, etc.

Introduction to Work Group Organization and Scope

Dr. Barbara Millen (DGAC Chair) began by acknowledging the overall aim of the Committee to develop food-based recommendations with the greatest potential to impact preventable disease and promote the health of the public.

Dr. Millen described the division of the Committee into three Work Groups organized around three overarching themes that the Committee identified as priority areas affecting the nutrition status of the nation. Each Work Group met yesterday and will continue their work over the summer to develop and prioritize topic areas and formulate questions that they see as having the greatest likelihood of informing the *Dietary Guidelines for Americans, 2015*. In the fall, each Work Group will report back to the full Committee at a public meeting for public discussion and deliberations among the full Committee.

Dr. Millen described that Work Group 1: Environmental Determinants of Food, Diet, and Health (led by Dr. Miriam Nelson) will consider the environmental influences on the public’s dietary intake and physical activity. Work Group 2: Dietary Patterns and Quality and Optimization through Lifestyle Behavior Change (led by Dr. Rafael Pérez -Escamilla) will consider the current dietary and physical activity patterns of Americans and their influence on health through all life stages. This Work Group will also consider the best interventions for optimizing dietary and physical activity patterns. Work Group 3: Foods, Beverages, and Nutrients and Their Impact on Health Outcomes (led by Dr. Alice H. Lichtenstein) will consider current dietary guidance related to foods, beverages, nutrients, and other dietary components and consider where current guidance remains sound and where guidance may need to be modified in light of new evidence. Additionally, the Work Group will determine which nutrients and dietary components pose the greatest public health concern at this time and what emerging evidence exists to guide new policies related to foods, beverages, nutrients, and other dietary components.

Before calling for the first Work Group to report, Dr. Millen identified the members of each Work Group. The Work Groups were then asked to discuss the scope of their work and their preliminary thoughts on key topics to address.

Work Group 1: Environmental Determinants of Food, Diet, and Health

Dr. Miriam Nelson, Work Group Lead, began by acknowledging the Work Group members—Drs. Steven Abrams, Lucile Adams-Campbell, and Mary Story. She then described how the environment was presented as a “Call to Action” in Chapter 6 of the *Dietary Guidelines for Americans, 2010*. She noted that this is an important area for the 2015 Committee to address, as more evidence is available now than was available for the 2010 Committee.

Dr. Nelson described five primary topic areas that the Work Group identified: food environment, physical activity environment, agriculture/aquaculture sustainability, food systems, and food safety. Within each topic area, the Work Group will consider the overarching themes of the social-ecological model and health equity/food access. Subtopics the Work Group identified within each primary topic area were:

Food environment: Physical settings, media/marketing environment, and policy environment

Physical activity environment: Physical settings, built environment, media/marketing environment, and policy environment (carrying forward relevant recommendations from the *Physical Activity Guidelines for Americans* and the National Physical Activity Plan)

Agriculture/aquaculture sustainability: How, what, and where foods are grown and their relationship with the long-term health of humans and the planet

Food systems: Local/regional food and markets/systems as well as the influence of policy on what foods are grown/produced, processed, distributed, and marketed, and their cost

Food safety: Toxic components of the food supply and food production/distribution and microbiological hazards, particularly as these factors relate to fetal effects in pregnancy/lactation (carrying forward recommendations from the *2010 Dietary Guidelines* on food safety behaviors at the individual-level)

Dr. Nelson reported on overarching themes that the Work Group thought should be considered. These themes were nutrition/media literacy, health disparities, lifespan transitions, and a systems approach. She also noted the importance of coordination and integration between the Work Groups and subsequent Subcommittees.

Dr. Nelson said that external experts would be asked to present to the Work Group to help inform their work, and she encouraged public comments related to the topics being considered by the Work Group. Dr. Nelson closed by stating that the goal of the Work Group was to evaluate the best possible evidence to promote a healthy, sustainable, and safe food system for Americans for generations to come.

Discussion of Work Group 1 Presentation

Drs. Pérez -Escamilla and Foster encouraged the Work Group to carry forward recommendations from the *2010 Dietary Guidelines* and other relevant sources, when possible. Dr. Foster also encouraged the Work Group to acknowledge important areas where research is needed. Dr. Hu noted that the type of evidence available related to this topic area may be different than what is considered for some of the other topics considered by the Committee.

Several Committee members noted policies that have been implemented that could be reviewed, including changes to the WIC program, the introduction of menu labeling, and banning of *trans* fat. Several additional topics were suggested by Committee members, including food insufficiency/hunger, organic versus traditional growing patterns, immigration, and food waste. Dr. Nelson responded that these topics would be considered by the Work Group.

Work Group 2: Dietary Patterns and Quality and Optimization through Lifestyle Behavior Change

Dr. Rafael Pérez-Escamilla, Work Group 2 Lead, introduced the other members of Work Group 2: Drs. Anna Maria Siega-Riz, Cheryl Anderson, Frank Hu, and Gary Foster.

Dr. Pérez-Escamilla began his presentation by identifying the *2010 Dietary Guidelines* recommendations relevant to Work Group 2. These included key recommendations on dietary patterns, calorie balance, energy density, eating behaviors, physical activity, and alcohol consumption. Also included in the *2010 Dietary Guidelines* is the identification of a number of behaviors and practices to help manage body weight.

He then identified the initial scope of work and topic areas for Work Group 2, which included dietary patterns and health outcomes; clustering of dietary patterns and lifestyle risk factors; assessment of dietary quality indices and dietary patterns; energy intake, physical activity, and energy balance; and impact of dietary interventions delivered through different methods, systems, and modes on diet and behavior change. Other potential topic areas to explore included multi-level systems that may influence behavior change and dietary patterns, and the microbiome profile.

Dr. Pérez-Escamilla then summarized the initial Work Group 2 discussion. Major topics identified for future question development were:

Descriptive analysis of what, where, and how people are eating and drinking (i.e., dietary patterns): This includes foods and beverages and how they are prepared. A life course approach would look at groups of interest--young children, school-aged children, teens, pregnant and lactating women, adults, and older adults. They will also consider gender and ethnic/racial differences.

Metabolic and health outcomes of dietary patterns: This was initiated by the 2010 DGAC. An emerging topic is the relationship between dietary patterns and the microbiome. An expert may be brought in to discuss the current status of this area with the Work Group. Another area is screen time; it has been related to obesity, but its relationship to dietary patterns would be new. He noted alcohol is not a new topic, but how does it affect dietary patterns? Alcohol has calories but can be part of healthy dietary patterns.

What works for individuals to adhere to healthy dietary patterns (i.e., innovative technologies for behavior change): This includes both traditional and innovative technologies that can be applied in various settings. Use of mobile devices and social media are areas of interest, and another expert may be invited to discuss this area, as well as what is known about delivery of brief motivational interventions in primary health care.

Physical activity: He acknowledged this area is enormously important and recent reports that emphasize what works among youth, including the *Physical Activity Guidelines for Americans, 2008* and the *Physical Activity Guidelines for Americans Midcourse Report*, are available.

Discussion of Work Group 2 Presentation

Dr. Hu noted that the definition of dietary patterns is broad and can include geographically based patterns, vegetarian, indices, and derived patterns; therefore, it needs to be refined. Dr. Siega-Riz added that when examining relationship of dietary patterns to health, the intent is to start with research gaps that were identified in the 2010 DGAC report and look at new studies.

Dr. Story suggested taking age into consideration, such as a focus on adolescents (including girls and preconception nutrition), young adults ages 18 to 25 years (including weight gain, fast food consumption, marketing), and older adults, over 70-75 years of age. Dr. Siega-Riz replied that the Work Groups will try to move forward from the 2010 Report and that the life course groups are a very important focus. Dr. Foster agreed it is important to look at these groups, and noted that there is relevant information in the descriptive literature.

Dr. Story reported that there is emerging literature on family/social meals, looking at the benefits of eating together versus eating alone. Dr. Hu suggested looking at family meals related to children's diet. Dr. Pérez-Escamilla agreed that looking at family meals is relevant to the "what works" topic.

Dr. Lichtenstein suggested the Work Group consider how dietary patterns may be different for immigrants; how their diet and health change as they adapt to a more typical American eating pattern.

Dr. Campbell asked about *when* people eat, within a day, week, or season. 'When people eat' may place them at risk for weight changes. He also asked if the Work Group considered meal skipping, meal frequency, and weight control. Dr. Siega-Riz responded that this was considered, but there are methodological issues. Timing is not as important as the foods eaten. Meal occasions are self-identified and may differ between individuals. It is important to consider the type of food for each occasion. Dr. Hu added that literature in this area is growing and suggested, if possible, to come up with patterns of frequency, meal skipping, and weight control since these are used as weight control strategies.

Dr. Foster reminded of the need to evaluate dietary patterns in the context of a country that is two-thirds overweight or obese, which is the bigger issue. Dr. Nelson noted that in 2010 searches on breakfast and snacking were not successful. She suggested looking at family meals, which are important, as well as parenting style, especially for 2, 3, and 4 year olds. Dr. Siega-Riz agreed with looking at children's dietary patterns. Dr. Foster noted that this was not discussed previously, and there may not be data. Dr. Anderson suggested looking at the association between maternal and children's dietary patterns.

Dr. Neuhouser recommended including both "screen time" and "sedentary behaviors" in searches. It is an issue among middle age and older adults related to health issues such as diabetes and fractures. Sedentary behaviors may be more important than screen time. Dr. Pérez-Escamilla responded that both terms will be included. However, the group was not sure if the *Guidelines* would change for recommendations on sedentary behavior; in terms of priorities, screen time was preferred. Dr. Neuhouser responded that limiting the topic to screen time might miss some things. Dr. Adams-Campbell encouraged the inclusion of video gaming that involves

physical movement, because of the potential for positive effect. Dr. Nelson noted that evidence on video gaming was recently analyzed in the *Physical Activity Guidelines for Americans Midcourse Report*.

Dr. Millen noted the importance of how information from descriptive studies is used in clinical trials. Data exist, but has not been mined sufficiently for details of whether dietary patterns are influenced by behavior. She encouraged paying attention to how dietary patterning and meal patterning are being translated for interventions.

Dr. Story suggested consideration of other non-dietary strategies that can impact diet and weight loss, such as sleep patterns and self-monitoring. Dr. Foster replied that the Work Group did look at self-monitoring in that context, and will add sleep. This may be part of the environment or an individual behavior change strategy and a good overlap between Work Groups 2 and 1.

Dr. Nelson added that sleep might be interesting to consider for recommendations, especially for children. Dr. Hu suggested using existing systematic reviews on sleep and obesity. Dr. Pérez-Escamilla added that once exploratory searches are completed, the Work Group can see which topics have randomized control trials (RCTs). Dr. Nelson cautioned to not only limit to RCTs, which may not exist for all behaviors. Dr. Hu suggested including prospective cohort studies. Dr. Pérez-Escamilla noted that his comments were in the context of the “what works” strategy—examining evidence-based interventions. Dr. Foster agreed and reminded everyone to keep the bar high for study designs included in ‘what works’ —for example, does sleep extension along with behavioral intervention improve weight loss? Dr. Hu noted that sleep and screen time are also important in dietary patterns and energy intake. Dr. Siega-Riz noted that the primary connection is the influence of sleep patterns on what you eat and energy balance.

Work Group 3: Foods, Beverages, and Nutrients and Their Impact on Health Outcomes

Alice H. Lichtenstein, Work Group 3 Lead, briefly discussed the expanded scope of the *Dietary Guidelines for Americans*, which, in addition to food-based recommendations and guidance (including beverages), could address issues related to lifestyle behaviors and environmental factors. She acknowledged the Work Group members: Drs. J. Thomas Brenna, Wayne Campbell, Steven Clinton, and Marian Neuhouser.

The primary topics identified within the scope of Work Group 3 relate to the types of foods and beverages, including alcohol, associated with favorable clinical outcomes or chronic disease risk factors, and nutrient intakes of public health concern, including both over- and under-consumption. The Work Group began by reviewing the *Dietary Guidelines for Americans, 2010* recommendations that were initially identified as being relevant to their scope. The majority of the current recommendations reviewed fell within the Chapter 4 (Foods and Nutrients to Increase) and Chapter 3 (Foods and Nutrients to Decrease) of the 2010 policy document, including those for specific populations (e.g., pregnant and lactating women and older adults).

The following recommendations were initially identified as those unlikely to need readdressing: increase fruit and vegetable intake; eat a variety of vegetables; pregnant women choose high heme-iron foods and foods that promote iron absorption (e.g., vitamin C); limit consumption of refined grains; and dietary fat quality is more important than quantity.

The following topics were identified as high-priority topics to revisit: sodium, omega-3 fatty acids in terms of seafood, fortified foods and beverages and their impact on total nutrient consumption, *trans* fatty acids in both partially hydrogenated oils and ruminant fats, processed meats, dairy products in relation to nutrients of concern, and whole fruit and 100 percent fruit juice. Sodium was identified as a potential crosscutting topic between all Work Groups because of issues related to dietary patterns and the environment. Omega-3 fatty acids, in the context of seafood, were identified as a potential cross-cutting topic between Work Groups 1 and 3 because of issues related to risks versus benefits of consumption.

The following topics were identified as medium-priority topics to revisit: quantity of whole grains, 10 percent total energy from saturated fat, and 300 mg cholesterol per day. The latter two recommendations are based on historic references, and the group believed these topics should be reassessed. Whole grains were identified as a potential cross-cutting topic between Work Groups 2 and 3.

The two following topics were identified as low-priority topics to revisit: alcohol in terms of quantity and glycemic index. Alcohol was identified as a potential crosscutting topic between Work Groups 2 and 3 because of issues related to nutrient dilution, behavior, and environment.

The following topics were identified as new or emerging topics for consideration: foods and nutrients related to cognitive function, genetically modified foods (GMOs) and clinical outcomes, nutrient over-consumption and clinical outcomes related to fortified foods/beverages and supplements, foods and supplements and athletic performance, sugar-sweetened beverages, and gene-nutrient interactions. The relationship between foods and nutrients and cognitive function was identified as a very important focus area.

General issues that affect all the Work Groups include clinical outcomes versus intermediate biomarkers and risk factors, and evidence identified and reviewed for those, as well as recommendations to increase intake versus substitution with other foods.

Discussion of Work Group 3 Presentation

Dr. Campbell reiterated Work Group 3's interest in evidence for expanding the definition of "health" to include health outcomes related to cognitive health and mental health. Dr. Brenna agreed and noted current public interest in mental health as a serious public health issue.

Dr. Nelson noted that many of the Work Group's potential topics are based on food components rather than foods, and encouraged the Committee to focus primarily on foods. She also noted public interest in gluten intolerance and celiac disease. Dr. Lichtenstein agreed that this topic should be considered under new and emerging areas.

Dr. Nelson encouraged Work Group 3 to consider the topic of sugar-sweetened beverages a high-priority area, and noted the topic of added sugars beyond those found in sugar-sweetened beverages. Dr. Lichtenstein agreed to broaden the topic to added sugars in foods and beverages. Dr. Hu also agreed and suggested the Committee consider these topics as refined carbohydrates in terms of carbohydrate quality. He also asked whether Work Group 3 discussed water as a substitution for sugar-sweetened beverages. Dr. Lichtenstein said that it is within the realm of

what should be considered. Dr. Perez-Escamilla noted that most studies do not consider beverage consumption when computing energy density.

Dr. Hu encouraged Work Group 3 to revisit the issue of glycemic index within a broader context.

Dr. Hu suggested considering processed meat and red meat together, because many studies have done so when investigating diabetes, heart disease, and cancer. He noted this as a potential cross-cutting topic between all Work Groups because of issues related to dietary patterns and the environment.

Dr. Siega-Riz asked if Work Group 3 discussed the contribution of specific probiotic-containing foods to various health outcomes, noting that evidence on dietary patterns does not necessarily include probiotic foods; however, there may be some overlap on this topic between Work Groups 2 and 3. Dr. Lichtenstein said this topic had not been discussed by Work Group 3.

Dr. Hu noted that *trans* fat consumption has decreased by 80% in recent years as a result of regulatory efforts and asked for Work Group 3's rationale on identifying this as a topic to revisit. Dr. Brenna said he has specific questions related to recommendations to lower dairy-fat as a result of recommendations to lower *trans* fat, and that the distinction between industrially-produced and ruminant-produced *trans* fat is unclear. Dr. Lichtenstein added that there are issues related to separating dairy fat from saturated fat, as dairy is one of the major sources of saturated fat in the U.S. diet. Dr. Nelson noted that this issue is an interesting research question, but may not affect policy.

Dr. Campbell noted the importance of considering specific age groups and high-risk populations.

Dr. Anderson questioned if Work Group 3 discussed potassium specifically in light of the interaction between sodium and potassium. Dr. Lichtenstein said potassium would be included along with the topic of sodium.

Dr. Lichtenstein thanked the staff and closed the discussion.

Meeting Wrap Up and Next Steps

Dr. Millen thanked the Committee for their comments and noted the Committee's positive, collegial tone and collaboration during the meeting. She thanked the staff for their efforts prior to and during the meeting. In closing, she encouraged the Committee to identify topics that are likely to have the greatest impact on food-related public policy, and noted that the Committee's next steps included formulating and prioritizing research questions. Dr. Olson thanked the Committee, staff, and the public for their participation; and Dr. Millen closed the meeting.

(Meeting adjourned at 3:04 p.m.)

Attachment: Meeting Participant List

Dietary Guidelines Advisory Committee Meeting 1

Sponsored by the
U.S. Department of Health and Human Services (HHS)
U.S. Department of Agriculture (USDA)

Held at the
National Institutes of Health
Building 10, Masur Auditorium
9000 Rockville Pike
Bethesda, MD 20892

June 13-14, 2013

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