

Part C. Methodology

Introduction

The 2025 Dietary Guidelines Advisory Committee (Committee) was established to review scientific evidence to be considered by the U.S. Departments of Health and Human Services (HHS) and Agriculture (USDA) as the Departments develop the *Dietary Guidelines for Americans, 2025-2030* (*Dietary Guidelines*). The Committee's work culminated in the development of this report, which summarizes the Committee's review of the science.

This chapter describes the process to identify the scientific questions to be examined by the Committee, the process to appoint members to the Committee, and the methods the Committee used to review scientific evidence and develop this report. These activities are shown as Step 1: Identify Scientific Questions; Step 2: Appoint the Committee; and Step 3: Committee Reviews Scientific Evidence and Develops and Releases Report in [Figure C.1](#)—which provides an overview of the timeline for each activity—and are further described in the sections that follow.

The Committee used 3 separate yet complementary scientific approaches to conduct its review of the science: data analysis, systematic reviews, and food pattern modeling. A description and detailed methodology for each approach is provided in the section on Step 3.

FIGURE C.1
TIMELINE FOR THE 2025 DIETARY GUIDELINES ADVISORY COMMITTEE PROCESS



Step 1: Identify Scientific Questions

Prior to the 2025 Committee's establishment, HHS and USDA identified scientific questions that the Committee could potentially examine. Proposing scientific questions before establishing the Committee allowed for a deliberative process that incorporated a broad diversity of expertise from both inside and outside the federal government. Other advantages included clearly defining the types of expertise needed

on the Committee, allowing the Committee to focus its efforts on reviewing evidence related to the scientific questions, and ensuring that the Committee's work built on the 2020-2025 edition of the *Dietary Guidelines* and met the needs of federal nutrition policies and programs.

To identify the proposed scientific questions, the Departments conducted a year-long process beginning in 2021 to gather information, receive input from federal experts, and review relevant documents. The scientific questions informed the scope of the Committee's review of the science and its Scientific Report. The criteria HHS and USDA used to identify and prioritize the proposed scientific questions included:

- **Relevance:** Question is within the scope of the *Dietary Guidelines* and is focused on food-based recommendations for the general public, not clinical guidelines for medical treatment.
- **Importance:** Question addresses an area of substantial public health concern, uncertainty, and/or knowledge gap.
- **Potential Impact to Federal Programs:** A high probability exists for the question to provide the scientific foundation for guidance that would inform federal food and nutrition policies and programs.
- **Avoiding Duplication:** Question is not addressed through existing or planned evidence-based federal guidance (other than the *Dietary Guidelines*).

Research availability was also considered for proposed scientific questions that would be addressed by systematic reviews. Research availability considers whether sufficient evidence exists to conduct a new systematic review or update an existing systematic review. If adequate research was not available, the question was identified as an area needing more research.

HHS and USDA also considered the following items as they applied the criteria:

- **Scientific Report of the 2020 Dietary Guidelines Advisory Committee:** Questions addressed by the 2020 Committee, particularly those that informed development of the current *Dietary Guidelines*; and future directions documented in the *Scientific Report of the 2020 Dietary Guidelines Advisory Committee*.¹
- **Topics of Public Health Interest:** The state of current nutrition science and potential new topics of public health interest.
- **Federal Review:** Input from federal nutrition scientists and program experts from across the federal government, including the Interagency Committee on Human Nutrition Research (ICHNR) and other federal experts.
- **Federal Resources:** To avoid duplication of efforts, topics addressed by existing or planned federal resources were not included on the list of proposed scientific questions but may be included in the *Dietary Guidelines for Americans, 2025-2030*.

Two examples of topics that were proposed as scientific questions included dietary patterns with varying amounts of ultra-processed foods (UPF) and food sources of saturated fat. UPF was an area of recent nutrition research and a topic of interest among the public and federal nutrition scientists. Food sources of saturated fat was also a topic of public health interest and was recommended in the future directions of the *Scientific Report of the 2020 Dietary Guidelines Advisory Committee*. Both topics met the criteria of relevance, importance, potential impact to federal programs, and avoiding duplication of existing or planned evidence-based federal guidance.

Topics that met the criteria and that were not addressed by federal resources or through separate efforts were included in the list of proposed scientific questions. To provide transparency about existing or planned federal resources that may be used to inform the *Dietary Guidelines for Americans, 2025-2030*, the following list of topics was posted on DietaryGuidelines.gov. These topics were not reviewed by the Committee:

- Healthy food environments (e.g., Community Preventive Service Task Force findings)²
- Oral health (e.g., CDC Oral Health)³
- Food safety (e.g., FoodSafety.gov)⁴
- Specific nutrient recommendations (Dietary Reference Intakes)⁵
- Human milk, infant formula, and health outcomes (e.g., forthcoming federal systematic reviews)⁶
- Seafood (e.g., FDA/EPA Advice about Eating Fish)⁷
- Eating disorders (e.g., National Institute of Mental Health resources on eating disorder symptoms, risk factors, and treatment)⁸
- Physical activity (Physical Activity Guidelines for Americans)⁹

Additionally, HHS and USDA determined that the topic of alcoholic beverages and health requires a comprehensive review with significant, specific expertise and would be best addressed through a process separate from the Committee's work. Two separate scientific reviews on adult alcohol consumption and health are being conducted as of the time of this report's preparation, one by an interagency committee led by HHS, the Interagency Coordinating Committee on the Prevention of Underage Drinking (ICCPUD),¹⁰ and the other by the National Academies of Sciences, Engineering, and Medicine (NASEM).¹¹ These reviews are independent of each other yet are working on complementary tracks. Both projects include external scientific peer review and opportunities for public participation. Each will result in a report with scientific findings—not recommendations—on alcohol consumption. These findings will be considered by HHS and USDA as the Departments develop the *Dietary Guidelines for Americans, 2025-2030*.

Public Engagement on Scientific Questions

HHS and USDA publicly issued the proposed scientific questions on April 15, 2022. In the announcement about the questions, the Departments noted that all questions would be reviewed through a

health equity lens ([Box C.1](#)). The Departments requested public comments on the proposed scientific questions from April 15 through May 16, 2022. Approximately 1,400 public comments were received, with about half of these submissions identified as unique comments. HHS and USDA considered all comments in relation to the criteria listed above as the Departments worked with the Committee to refine and prioritize the scientific questions throughout its review of the science.



Box C.1: Health Equity Lens

When the proposed questions were shared for public comment, HHS and USDA stated that all scientific questions would be reviewed with a health equity lens to ensure that the next edition of the *Dietary Guidelines* is relevant to people with diverse racial, ethnic, socioeconomic, and cultural backgrounds. The steps the Committee took to operationalize the health equity lens are included in this chapter's sections describing each scientific approach and additional context is available in **Part B. Chapter 3: Health Equity and Nutrition**.

After the Committee was appointed (Step 2), it considered the proposed scientific questions and determined if scientific questions should be added, refined, or removed as it prioritized questions for its review. The Committee used the criteria of relevance, importance, potential impact to federal programs, avoiding duplication, and research availability (as described previously) during its prioritization process.

The complete list of scientific questions addressed by the Committee is included in [Table C.1](#) in this chapter's section titled "Scientific Question Prioritization." That section also provides rationale for why some questions that were originally proposed by the Departments or the Committee were later deprioritized or discontinued. The list of proposed scientific questions was available for public reference on DietaryGuidelines.gov throughout the Committee's term.

Step 2: Appoint the 2025 Dietary Guidelines Advisory Committee

After the Departments shared the proposed scientific questions for public comment and determined the expertise needed on the Committee, the next step was to form the Committee. The Committee was convened and governed under the Federal Advisory Committee Act (FACA).¹² The process to form the Committee included establishment of its charter; a public call for nominations; review of nomination packages by HHS and USDA staff, leadership, and ethics officials, including nominees' financial, ethical, legal, and/or criminal conflicts of interest; and appointment to the Committee by the Secretaries of HHS and USDA.

Charter for the 2025 Dietary Guidelines Advisory Committee

FACA requires that a charter be prepared and filed with Congress before a federal advisory committee meets or takes any action. The charter for the Committee was filed with Congress on December 9, 2022, and was posted publicly on DietaryGuidelines.gov. The charter provides the Committee's mission or charge, specific duties, and general operational characteristics. The Committee was established to use

approaches including data analysis, systematic reviews, and food pattern modeling to examine evidence on the scientific questions, and then to develop a Scientific Report for submission to the Secretaries of HHS and USDA. The charter stated that the Committee's Scientific Report should describe the Committee's evidence review and conclusions and provide science-based advice and rationale to the Departments based on the preponderance of evidence reviewed. The charter also stated that HHS and USDA would use the Committee's Scientific Report as they develop the *Dietary Guidelines for Americans, 2025-2030*. More information about federal advisory committee charters and other information related to FACA is available through the U.S. General Services Administration (GSA).¹² The responsibility for chartering a committee for each new edition of the *Dietary Guidelines* rotates between HHS and USDA every 5 years. HHS was responsible for chartering the 2025 Committee and serving as the administrative lead for the *Dietary Guidelines for Americans, 2025-2030*. FACA requires that only 1 agency be responsible for support services at any 1 time, even if the advisory committee reports to more than 1 agency (5 U.S.C. § App. 2 § 12(b)). However, in accordance with the National Nutrition Monitoring and Related Research Act of 1990,¹³ HHS and USDA work together to support development of the *Dietary Guidelines*, and the Committee's report is submitted to both Secretaries.

Call for Nominations

HHS and USDA announced a public request for nominations to the 2025 Committee on June 14, 2022. Nominations were accepted from June 15 to July 15, 2022. The nomination package requirements were described in the *Federal Register* notice (Docket ID: OASH-2022-12865). To help support the goal of having a balanced and diverse Committee, the Departments encouraged self-nominations and conducted outreach to make the public aware of the opportunity to provide nominations. HHS and USDA used the following criteria to review nominations:

- **Professional Experience:** At least 10 years of experience as an academic, researcher, practitioner, or other health professional in a field related to 1 or more of the scientific topic areas to be examined; consideration of leadership experience and participation on previous expert committees or panels.
- **Educational Background:** Advanced degree in nutrition or health-related field, including registered dietitians, nutrition scientists, physicians, and individuals with public health degrees.
- **Demonstrated Scientific Expertise:** Expertise related to 1 or more of the scientific topic areas to be examined by the Committee as demonstrated by the number and quality of peer-reviewed publications and presentations. Expertise related to health equity and the scientific approaches used to review the evidence was also desired.
- **Balanced and Diverse Membership:** A Committee that is reasonably balanced in terms of points of view and expertise, experience, education, and institutional affiliation, with a goal of establishing a diverse membership reflective of the racial, ethnic, gender, and geographic diversity within the United States.

Review of Nominations

All complete nomination packages were reviewed by HHS and USDA staff based on the criteria described above. Nominations were then evaluated by HHS and USDA leadership.

Each member of the Committee was vetted extensively prior to appointment. As the administrative lead for the 2025 Committee, HHS conducted background checks to determine if any candidates had financial, ethical, legal, and/or criminal conflicts of interest that would prohibit them from serving on the Committee. In addition, in compliance with federal ethics laws and regulations, each Committee member submitted a confidential financial disclosure report (known as the Office of Government Ethics, or OGE, Form 450) and continued to submit this form annually until the Committee's term concluded. HHS ethics officials reviewed the confidential financial disclosure reports and ensured each Committee member's interests and affiliations complied with federal laws and regulations. Following the review process, the individuals recommended for Committee membership were submitted to the Secretaries of HHS and USDA for approval.

Appointment to the Committee

The Secretaries of HHS and USDA reviewed the Departments' nomination recommendations for proposed Committee members, including Chair and Vice Chair, and jointly appointed individuals to serve on the Committee. On January 19, 2023, HHS and USDA announced the appointment of 20 nationally recognized nutrition and public health experts to serve on the Committee (see **Appendix F-3: Biographical Sketches of the 2025 Dietary Guidelines Advisory Committee**). The Committee included experts with experience across life stages from a variety of fields such as nutrition science, medicine, epidemiology, public health, and psychology. The majority of experts had conducted research with diverse populations, and many had expertise in health equity.

Management of Potential Conflicts of Interest

Members of the Committee were appointed as special government employees (SGEs). All SGEs have a fiduciary responsibility to the federal government while working on advisory committees and must follow comprehensive federal ethics laws and regulations, including criminal conflicts of interest, financial disclosure reporting laws, and Standards of Ethical Conduct for Employees of the Executive Branch per OGE regulations.¹⁴ All members of the Committee complied with the federal ethics laws and regulations governing conflicts of interest, and with the reporting of necessary financial information under these laws. Committee members participated in an Ethics training upon Committee appointment and annually thereafter.

In addition to the requirements of federal ethics laws and regulations, the Committee voluntarily disclosed any relationships, activities, and interests during the prior 12 months that may potentially be related to the content of the Committee's scientific review, using a form from the International Committee of Medical Journal Editors (ICMJE).¹⁵ As defined by ICMJE, "related" referred to any relationship with for-profit or not-for-profit third parties whose interests may affect the content of the Committee's report. These disclosures represent a commitment to transparency and do not necessarily indicate a bias. The

Committee worked collectively to review the evidence on diet and health and provide advice, minimizing any potential bias from individual members. Because its work is collective, the Committee provided its disclosures collectively rather than individually. These voluntary disclosures were posted publicly on DietaryGuidelines.gov and represented a commitment to transparency.

In addition to these measures to manage potential conflicts of interest, the approaches the Committee used to examine the evidence—data analysis, systematic reviews, and food pattern modeling—are rigorous, objective, protocol-driven, and designed to minimize bias. Protocols for each question were developed before examining any evidence and were presented for discussion during the Committee’s meetings. The protocols were also posted to DietaryGuidelines.gov and NESR.usda.gov, providing transparency to the public throughout the Committee’s deliberations. The review of the science was based on consensus. It was not based on any 1 member’s expertise, nor were the final decisions for the scientific evaluation reached on an individual basis. The Committee’s review of the science was completed in a collaborative manner, minimizing the impact of any real or perceived conflicts of interest of individual members. Further, the Committee’s systematic review and food pattern modeling work underwent external peer review as described below, ensuring that this work was transparently described and the conclusions were supported by the evidence.

Step 3: Committee Reviews Scientific Evidence

The Committee used 3 approaches to examine the evidence: data analysis, systematic reviews, and food pattern modeling. The following sections describe the Committee’s working structure and processes, including the Committee’s process to prioritize the scientific questions proposed by HHS and USDA, the methodology specific to each of the 3 approaches, and how health equity was considered in the examination of evidence. Throughout the process of conducting and documenting its examination of evidence, the Committee sought to use inclusive language ([Box C.2](#)).



Box C.2: Inclusive Language

The Committee sought to use identity-affirming language that does not exclude, discriminate, or perpetuate stereotypes of groups of people based on factors such as sex, social gender or gender identity, disability, and health status to the extent possible, while accurately reflecting what was reported in data sources and the scientific literature. For instance, the Committee identified “toddler” as an imprecise and ableist descriptor of development that does not include the necessary specificity of the age group and moved to define life stage during early childhood based solely on age. The Committee also used person-first language to avoid stigmatizing and instead center the person above a condition. For recommendations to enhance the design and reporting of surveys and scientific studies to allow for further inclusivity, see [Part E. Future Directions](#).

Committee Working Structure and Processes

Committee Meetings

The Committee met 7 times to provide updates on its review of the science, deliberate on its findings, and plan for future work. In accordance with FACA regulations, all meetings of the Committee were held publicly. The Committee's work began at its first meeting and concluded upon submission of this report to the Departments. All meetings were held in person in Rockville, MD, except for Meetings 4 and 7, which were held virtually. The public was invited to attend all meetings virtually via livestream, and video recordings of each meeting were posted to [DietaryGuidelines.gov](https://www.dietaryguidelines.gov).

At its first meeting, federal staff provided the Committee with an overview of the proposed scientific questions identified by HHS and USDA. Following this meeting, members divided into Working Groups to refine and prioritize the proposed scientific questions. The Committee discussed the results of this process at its second meeting. After the Committee's second meeting, the Committee established its Subcommittee structure, which it used to conduct its review of the science on its prioritized scientific questions. At Meetings 3 through 6, the Committee heard updates from each Subcommittee and discussed progress made on its review of the science. Topics included protocol and plan development, evidence reviewed and analyses conducted, draft conclusion statements, and plans for future Committee work. Federal staff from HHS and USDA supported the Committee throughout its work. The Committee's seventh and final meeting focused on its Scientific Report. This meeting provided an opportunity for Committee discussion and deliberation before it submitted its report to the Departments. Meeting materials including agendas, videocast recordings, presentation slides, and summaries, were posted to [DietaryGuidelines.gov](https://www.dietaryguidelines.gov) following each meeting.

The Committee also participated in 4 administrative trainings, which were solely administrative and did not include discussion or deliberations about the Committee's review of the science. All administrative trainings were held virtually via webinar. The first administrative training was held on January 30, 2023, prior to the Committee's first meeting, to prepare the Committee for its work of examining the evidence. It included an overview of the Committee's charter, operations, and timeline; an introduction to [DietaryGuidelines.gov](https://www.dietaryguidelines.gov); a public affairs briefing; and an introduction to FACA. A second administrative training on May 26, 2023, oriented the Committee to the Nutrition Evidence Systematic Review (NESR) methodology. A third administrative training on October 30, 2023, oriented the Committee to the organization of its Scientific Report and the writing responsibilities of members. A final administrative training was held virtually on December 4, 2024, to share information on the posting of the Committee's Scientific Report, including plans for the Scientific Report release. Ethics trainings were also conducted upon Committee appointment and annually thereafter.

Scientific Question Prioritization

As described earlier in this chapter, the Committee formed Working Groups to refine and prioritize the proposed scientific questions. The Working Groups used in their prioritization the same criteria that HHS and USDA used to identify the scientific questions in Step 1, and also considered public comments.

For questions answered using data analysis, federal staff from the HHS Office of Disease Prevention and Health Promotion (ODPHP) and the USDA Center for Nutrition Policy and Promotion (CNPP) worked with the Committee to prioritize data analyses that described and considered factors such as socioeconomic position, food security, and race and/or ethnicity. All 4 data analysis questions identified by HHS and USDA were completed.

For questions answered using systematic review methodology, staff from USDA's NESR Branch provided preliminary research availability estimates for proposed systematic review questions. The Committee decided to adjust the wording of some questions, added questions, and deprioritized some questions, and ultimately completed 28 systematic reviews. The Committee also opted to conduct 1 evidence scan. An evidence scan is an exploratory evidence description project in which systematic methods are used to search for and describe the volume and characteristics of evidence available on a nutrition question or topic of public health importance. As described later in this report, this evidence scan provides a basis for a future expert committee to develop systematic review protocols.

For questions answered using food pattern modeling methodology, federal staff from ODPHP and CNPP supported the Committee in planning and prioritizing a series of analyses that would provide evidence for the Committee to answer the overarching food pattern modeling question. These analyses were outlined by the Committee in 9 food pattern modeling protocols and 2 additional protocols that were exploratory analyses. The results of these food pattern modeling analyses were synthesized with results from systematic review and data analysis to answer the overarching question.

As was the case with previous Committees, prioritization continued throughout the Committee's review of the science to ensure the highest priority questions could be completed within the Committee's term. Decisions to discontinue systematic review questions were discussed publicly at the Committee's meetings and were documented on DietaryGuidelines.gov with the rationale explaining why the questions were discontinued. The list of scientific questions the Committee ultimately addressed in its review of the science was available on DietaryGuidelines.gov throughout the process and is presented in [Table C.1](#).

TABLE C.1
SCIENTIFIC QUESTIONS ADDRESSED BY THE COMMITTEE'S REVIEW OF THE SCIENCE

Question	Approach
What are the current patterns of food and beverage intake?	Data Analysis
What are the current intakes of food groups, nutrients, and dietary components?	Data Analysis
What is the current prevalence of nutrition-related chronic health conditions?	Data Analysis

Question	Approach
Which nutrients and/or dietary components present a substantial public health concern because of underconsumption or overconsumption?	Data Analysis
What is the relationship between dietary patterns consumed and growth, body composition, and risk of obesity?	Systematic Review
What is the relationship between dietary patterns consumed and risk of cardiovascular disease?	Systematic Review
What is the relationship between dietary patterns consumed and risk of type 2 diabetes?	Systematic Review
What is the relationship between consumption of dietary patterns with varying amounts of ultra-processed foods and growth, body composition, and risk of obesity?	Systematic Review
What is the relationship between dietary patterns consumed and risk of breast cancer?	Systematic Review
What is the relationship between dietary patterns consumed and risk of colorectal cancer?	Systematic Review
What is the relationship between dietary patterns consumed and risk of cognitive decline, dementia, and Alzheimer's disease?	Systematic Review
What is the relationship between beverage patterns consumed and growth, body composition, and risk of obesity?	Systematic Review
What is the relationship between dairy milk and milk alternative consumption and growth, body composition, and risk of obesity?	Systematic Review
What is the relationship between 100% juice consumption and growth, body composition, and risk of obesity?	Systematic Review
What is the relationship between sugar-sweetened beverage consumption and growth, body composition, and risk of obesity?	Systematic Review
What is the relationship between low- and no-calorie sweetened beverage consumption and growth, body composition, and risk of obesity?	Systematic Review
What is the relationship between sugar-sweetened beverage consumption and risk of type 2 diabetes?	Systematic Review
What is the relationship between low- and no-calorie sweetened beverage consumption and risk of type 2 diabetes?	Systematic Review
What is the relationship between food sources of saturated fat consumed and risk of cardiovascular disease?	Systematic Review
What is the relationship between dietary patterns consumed during pregnancy and risk of hypertensive disorders of pregnancy?	Systematic Review
What is the relationship between dietary patterns consumed during pregnancy and risk of gestational diabetes mellitus?	Systematic Review
What is the relationship between repeated exposure to foods and food acceptance?	Systematic Review
What is the relationship between complementary feeding and growth, body composition, and risk of obesity?	Systematic Review
What is the relationship between parental and caregiver feeding styles and practices during childhood and growth, body composition, and risk of obesity?	Systematic Review

Question	Approach
What is the relationship between parental and caregiver feeding styles and practices during childhood and consuming a dietary pattern that is aligned with the <i>Dietary Guidelines for Americans</i> ?	Systematic Review
What is the relationship between dietary patterns consumed during pregnancy and gestational age at birth?	Systematic Review
What is the relationship between dietary patterns consumed during pregnancy and birth weight?	Systematic Review
What is the relationship between frequency of meals and/or snacks and growth, body composition, and risk of obesity?	Systematic Review
What is the relationship between frequency of meals and/or snacks and energy intake?	Systematic Review
What is the relationship between frequency of meals and/or snacks and consuming a dietary pattern that is aligned with the <i>Dietary Guidelines for Americans</i> ?	Systematic Review
What is the relationship between portion size and growth, body composition, and risk of obesity?	Systematic Review
What is the relationship between portion size and energy intake?	Systematic Review
What evidence has been published on the relationship between culturally tailored dietary interventions and diet-related psychosocial factors, dietary intake, diet quality, and health outcomes?	Evidence Scan
Should foods and beverages with lower nutrient density (i.e., those with added sugars, saturated fat, and sodium) contribute to item clusters, representative foods, and therefore the nutrient profiles for each food group and subgroup used in modeling the USDA Dietary Patterns?	Food Pattern Modeling
What are the differences between nutrient profiles calculated using the dietary intakes of the total U.S. population and population groups?	Food Pattern Modeling
What are the implications for nutrient intakes when modifying the Dairy and Fortified Soy Alternatives food group quantities within the Healthy U.S.-Style Dietary Pattern? What are the implications for nutrient intakes when dairy food and beverage sources are replaced with non-dairy alternatives?	Food Pattern Modeling
What are the implications for nutrient intakes when modifying the Fruits food group quantities within the Healthy U.S.-Style Dietary Pattern?	Food Pattern Modeling
What are the implications for nutrient intakes when modifying the Vegetables food group and subgroup quantities within the Healthy U.S.-Style Dietary Pattern?	Food Pattern Modeling
What are the implications for nutrient intakes when modifying the quantities of the Grains group within the Healthy U.S.-Style Dietary Pattern? What are the implications for nutrient intakes when specific individual staple grains are emphasized; or when the Grains group is replaced with other staple carbohydrate foods (i.e., Starchy Vegetables; Beans, Peas, and Lentils; starchy Red and Orange vegetables)?	Food Pattern Modeling
What are the implications for nutrient intakes when modifying the Protein Foods group and subgroup quantities within the Healthy U.S.-Style Dietary Pattern or Healthy Vegetarian Dietary Pattern? What are the implications for nutrient intakes when proportions of animal-	Food Pattern Modeling

Question	Approach
based Protein Foods subgroups are reduced and proportions of plant-based Protein Foods subgroups are increased?	
What quantities of foods and beverages lower in nutrient density can be accommodated in the USDA Dietary Patterns while meeting nutritional goals within calorie levels?	Food Pattern Modeling
Can nutrient goals be met when animal sources of foods and beverages are removed from the Healthy Vegetarian Dietary Pattern for ages 2 years and older?	Food Pattern Modeling – Exploratory Analysis
Can nutrient goals be met when carbohydrate-containing foods and beverages are reduced in the Healthy U.S.-Style Dietary Pattern for ages 2 years and older?	Food Pattern Modeling – Exploratory Analysis
Do simulated diets that meet the updated USDA Dietary Patterns and reflect variation in dietary intakes achieve nutrient adequacy?	Food Pattern Modeling – Diet Simulation
Considering each life stage, should changes be made to the USDA Dietary Patterns (Healthy U.S.-Style, Healthy Mediterranean-Style, and/or Healthy Vegetarian), and should additional Dietary Patterns be developed/proposed based on: <ul style="list-style-type: none"> Findings from systematic reviews, data analysis, and/or food pattern modeling analyses; and/or Population norms, preferences, or needs of the diverse communities and cultural foodways within the U.S. population? 	Overarching Question

Proposed systematic review and evidence scan questions that the Committee decided to deprioritize, along with rationale and the meeting at which the Committee discussed the decision to deprioritize, are listed in [Table C.2](#).

TABLE C.2
DEPRIORITIZED SYSTEMATIC REVIEW AND EVIDENCE SCAN QUESTIONS

Question	Rationale	Timing of Decision
What is the relationship between dietary patterns consumed and risk of sarcopenia?	The Committee determined that a lack of research was available to update the existing NESR systematic review.	Meeting 2
What is the relationship between dietary patterns consumed and all-cause mortality?	The recent existing NESR systematic review had a conclusion statement graded as “strong” and the Committee chose to prioritize other outcomes in relation to dietary patterns.	Meeting 2
What is the relationship between dietary patterns consumed before and during pregnancy and lactation and developmental milestones, including neurocognitive development, in the child?	The Committee determined that a lack of research was available to update the existing NESR systematic review.	Meeting 2
What is the relationship between dietary patterns consumed and risk of lung cancer?	The Committee determined that a lack of research was available to update the existing NESR	Meeting 2

Question	Rationale	Timing of Decision
	systematic review and also identified challenges with smoking as a confounder.	
What is the relationship between food sources of added sugars consumed and: growth, body composition, and risk of obesity; risk of type 2 diabetes?	The Committee determined that a lack of research was available on food sources other than sugar-sweetened beverages (SSB), and SSB intake was addressed in other prioritized questions on beverages and complementary feeding.	Meeting 2
What is the relationship between water consumption and: growth, body composition and risk of obesity; risk of type 2 diabetes?	The Committee determined that a lack of research was available and had concerns about challenges with assessing water as an exposure. Additionally, water was included as a comparator across other beverage types examined.	Meeting 2
What is the relationship between beverage patterns consumed and risk of type 2 diabetes?	The Committee determined that a lack of research was available.	Meeting 2
What is the relationship between 1) timing of introduction, and 2) types and amounts of complementary foods and beverages and iron and zinc status?	The Committee determined that a lack of research was available to update the existing NESR systematic review.	Meeting 2
What is the relationship between dietary patterns consumed and risk of depression?	The Committee consulted federal subject matter experts on this topic and based on concerns from those experts about reverse causality and/or the plausibility of the relationship between dietary patterns and risk of depression, the Committee decided to discontinue this systematic review.	Meeting 3
What evidence has been published on the relationship between home food availability in adults and diet-related psychosocial factors, dietary intake, diet quality, and health outcomes?	The Committee determined that the planned evidence scan on culturally tailored dietary interventions was higher priority. In addition, home food availability in infants, young children, children, and adolescents was examined in other systematic reviews being conducted on caregiver feeding practices.	Meeting 4
What is the relationship between dietary patterns consumed and risk of prostate cancer?	In consideration of project workload and timelines, the Committee discontinued this systematic review after determining it was lower priority because fewer new studies had been published on this topic since it was previously reviewed, compared to dietary patterns and breast cancer or colorectal cancer.	Meeting 4
What is the relationship between coffee and/or tea consumption and: growth, body composition, and risk of obesity; risk of type 2 diabetes?	In consideration of project workload and timelines, the Committee discontinued this systematic review after determining that assessing the overall dietary pattern in relation to growth, body composition, risk	Meeting 4

Question	Rationale	Timing of Decision
	of obesity, and risk of type of 2 diabetes is higher priority than examining coffee and tea independently. In addition, the nutritional implications of consuming this beverage type are being examined in other systematic reviews and food pattern modeling analyses.	
What is the relationship between dairy milk and milk alternative consumption and risk of type 2 diabetes?	In consideration of project workload and timelines, the Committee discontinued this systematic review after determining that assessing the overall dietary pattern in relation to risk of type of 2 diabetes is higher priority than examining dairy milk and milk alternatives independently. In addition, the nutritional implications of consuming this beverage type are being examined in other systematic reviews and food pattern modeling analyses.	Meeting 4
What is the relationship between 100% juice consumption and risk of type 2 diabetes?	In consideration of project workload and timelines, the Committee discontinued this systematic review after determining that assessing the overall dietary pattern in relation to risk of type of 2 diabetes is higher priority than examining 100% juice independently. In addition, the nutritional implications of consuming this beverage type are being examined in other systematic reviews and food pattern modeling analyses.	Meeting 4
What is the relationship between dietary patterns consumed and bone health?	In consideration of project workload and timelines, the Committee discontinued this systematic review after determining that a lack of research was available to update the existing NESR systematic review and that other remaining questions were higher priority.	Meeting 5

Subcommittee Structure

Following Meeting 2, the Committee formed 4 Subcommittees focused on defined topic areas to address the prioritized scientific questions:

- Dietary Patterns and Specific Dietary Components Across Life Stages
- Diet in Pregnancy and Birth Through Adolescence
- Food Pattern Modeling and Data Analysis
- Strategies for Individuals and Families Related to Diet Quality and Weight Management

Additionally, 2 cross-cutting Working Groups—Health Equity and Meta-Analysis — addressed topics that were relevant either across the Committee or to multiple Subcommittees.

Each Subcommittee and Working Group was comprised of 6-12 Committee members, with 1 member serving as chair of each Subcommittee or Working Group. The Chair and Vice Chair of the Committee each served on 2 Subcommittees and both served on the Health Equity Working Group. The membership of each Subcommittee and Working Group is listed in **Appendix F-4: Membership of Dietary Guidelines Advisory Committee Subcommittees and Working Groups**.

The Subcommittees and Working Groups conducted their work between Committee meetings, meeting regularly via videoconference and communicating through e-mail. Subcommittees also met in person prior to Committee meetings. During Committee meetings, each Subcommittee presented its protocols and findings from its review of the science, explained the rationale for draft conclusion statements and recommendations, and answered questions from the Committee. All content presented at Committee meetings was considered draft, allowing for changes to be considered based on Committee discussions, as well as on public comments.

Public Comments During Committee Review of Scientific Evidence

The public was encouraged to submit comments to the Committee throughout its review of the science. The written public comment period opened on January 19, 2023, and remained open through October 7, 2024, several weeks following the Committee's sixth meeting, to allow for public comment throughout the entire process. The public also had the opportunity to provide oral comments to the Committee at Meeting 3 via video conference or by recording and submitting comments to be presented for the Committee at the meeting. The Committee had access to all written comments via Regulations.gov. A document summarizing comments received and linking to the full text of written comments was provided to Committee members throughout the process. Committee members considered all comments received. More information on these public comments, including a general description of the types of comments received and the process used for collecting public comments, is available in **Appendix F-2: Public Comments**.

Federal Staff Support

Federal staff from HHS and USDA worked in partnership to support the Committee throughout their process. As administrative lead, the Designated Federal Officer (DFO) was from the HHS ODPHP and led the administrative effort for the Committee's work. Additionally, staff from HHS and USDA helped manage Committee operations and contributed scientific support to the Committee's review of the science. The roles of staff and Committee members were clearly delineated to ensure that the Committee made all substantive decisions. The Committee developed and refined its protocols, synthesized evidence to develop conclusion statements, and graded the strength of the evidence for its systematic review conclusions. Staff supported the Committee by executing protocols; for example, by searching for and screening studies, extracting data, and conducting risk of bias assessments for systematic reviews; by conducting food pattern modeling analyses in accordance with the Committee's protocols; and by analyzing data based on Committee requests. The Committee was responsible for integrating evidence across all its conclusions to develop the overarching advice included in this report. Staff from HHS ODPHP,

USDA CNPP, and the Federal Data Analysis Team provided invaluable support and are including in the listing of **Dietary Guidelines Advisory Committee Membership and Federal Support Staff**.



Box C.3: Interpretation of Variables Related to Health Equity and Social Determinants of Health

The Committee recognized the impact of social determinants of health (SDOH) on diet-health relationships and the importance of considering SDOH when interpreting nutrition research. However, the availability of relevant SDOH data in nutrition research is limited. The Committee considered race, ethnicity, and socioeconomic position (SEP) across its review of the science given clear evidence of health disparities in nutritional status and diet-related chronic diseases based on economic, social and/or environmental disadvantage. The Committee recognized, however, that these variables serve as indirect proxies for a host of social, economic, and structural factors that underlie health disparities. Consequently, race, ethnicity, and SEP were identified as key confounders for all systematic reviews, prioritized as variables for data analysis stratifications, and used to examine nutrient profile differences in food pattern modeling protocols. More detail is provided in this chapter's sections describing methodology specific to each scientific approach.

The Committee framed race as a social construct that may serve as a proxy for other influential SDOH, including exposure to racial discrimination and structural racism. The attribution of race to biology was viewed as erroneous and contributing to inaccuracies in the understanding of population differences in health. The Committee also acknowledged that current conceptualizations of ethnicity may not accurately capture nuances in geography, nationality, or language that are important to identity and cultural belonging. Finally, SEP was defined to refer to social and economic factors that influence the positions individuals or groups hold in the structure of a society. SEP is broader than status and is inclusive of factors such as income, education, occupation, employment, and marital status.

The Committee identified the inclusion of direct and diverse indicators of SDOH—from broad-reaching social and economic influences such as health insurance coverage and discrimination to nutrition-specific SDOH including food security and participation in federal food and nutrition assistance programs—as a significant gap in research on diet-health relationships. Standard reporting of SDOH variables is critical for advancing health equity in populations of diverse racial, ethnic, socioeconomic, and cultural backgrounds. For more information, see **Part E. Chapter 2: Future Directions**.

Methodology Specific to the 3 Scientific Approaches

As outlined above, the Committee used 3 approaches to examine the evidence: data analysis, systematic reviews, and Food Pattern Modeling. Each approach has its own rigorous, protocol-driven methodology, and plays a unique, complementary role in examining the science. Methodology specific to the 3 scientific approaches is provided below and described further in online resources. Across all 3 scientific approaches, the Committee carefully considered how to interpret variables related to health equity and SDOH. The Committee’s approach to interpreting these variables is described in detail in [Box C.3](#).

Data Analysis

Data analysis is described in [Box C.4](#). A collection of nationally representative federal data sources informed the Committee’s work and deliberations. Data sources included the National Health and Nutrition Examination Survey (NHANES), including its dietary component, What We Eat in America (WWEIA); National Health Interview Survey (NHIS); Surveillance, Epidemiology and End Results (SEER); National Vital Statistics System (NVSS); National Immunization Surveys (NIS); and Pregnancy Risk Assessment Monitoring System (PRAMS). [Table C.3](#) describes these data sources and cites their methodologies. Federal staff from ODPHP and CNPP supported the Committee in leveraging existing data briefs and publications and coordinating original analyses when existing publications were not available to answer the Committee’s questions. When available, statistical testing for significance was considered when reported in data publications. The quantity of analyses examined by this Committee surpassed that of prior Committees; therefore, time limitations impacted the ability for this testing to be broadly completed across all analyses and reviewed and synthesized by the Committee.



Box C.4: Data Analysis

is the use of statistical methods to analyze national datasets to describe the current health and dietary intakes in the United States. This approach helped the Committee ensure its advice was practical, relevant, and achievable.

Analysis and review of the data was led by federal staff, informed by Committee requests. Data were shared with the Committee for synthesis, evaluation, and development of conclusion statements for each data analysis question.

Additionally, efforts were made to ensure that data analysis methodologies capture the most updated and relevant data possible. To address the disruption to federal data collection during the Coronavirus Disease 2019 (COVID-19) pandemic, an evidence scan was conducted to identify and describe data sources that captured food and beverage patterns from March 2020 to December 2022, including potential changes due to COVID-19.¹⁶ The Committee considered and discussed the evidence scan results that are described in **Part D. Chapter 1: Current Dietary Intakes and Prevalence of Nutrition-Related Chronic Health Conditions**. The full evidence scan can be found on [DietaryGuidelines.gov](https://www.dietaryguidelines.gov).

TABLE C.3
OVERVIEW OF FEDERAL DATA SOURCES FOR DATA ANALYSIS

Data Source	Supporting Agencies	Description of Data Sources
National Health and Nutrition Examination Survey (NHANES) ¹⁷	HHS, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics USDA, Agricultural Research Service (ARS), Food Surveys Research Group (FSRG)	NHANES is a federal program of studies designed to assess the health and nutritional status of children and adults residing in the 50 U.S. states and the District of Columbia. The nationally representative survey includes interviews (e.g., 24-hour dietary recall), questionnaires (e.g., demographics, food security, income), laboratory data (e.g., folate status or other biochemical markers of public health relevance), and physical examinations (e.g., height, weight, blood pressure), that measure dietary intakes and diet-related chronic disease rates in the U.S. population.
What We Eat in America, National Health and Nutrition Examination Survey (WWEIA, NHANES) ¹⁸	USDA, ARS, FSRG	The dietary component of NHANES, called WWEIA, is the only nationally representative survey of total food and beverage consumption that captures intakes across life stages on a population level in the United States. The dietary data are collected using the gold standard for dietary assessment: a multiple pass, 24-hour dietary recall.
USDA Food and Nutrient Database for Dietary Studies (FNDDS) ¹⁹	USDA, ARS, FSRG	FNDDS is a database that provides the energy and nutrient values for foods and beverages reported in WWEIA, NHANES. Data are available for energy and 64 nutrients for about 7,000 foods and beverages. The data can be used to examine nutrient intakes from foods and beverages reported by participants in WWEIA, NHANES and assess adherence to Dietary Reference Intakes.
USDA Food Pattern Equivalents Database (FPED) ²⁰	USDA, ARS, FSRG	FPED converts foods and beverages from FNDDS into 37 USDA Food Patterns components. It can be used to examine food group or component intakes (e.g., whole fruit, total Vegetables, added sugars) from foods and beverages reported by participants in WWEIA, NHANES and assess adherence to <i>Dietary Guidelines</i> food group recommendations.
WWEIA Food Categories ²¹	USDA, ARS, FSRG	WWEIA Food Categories provide an application to analyze the foods and beverages reported by participants in WWEIA, NHANES. Each food and beverage are placed in 1 of 167 mutually exclusive food categories, where similar items are grouped together based on their typical use and nutrient content (e.g., mixed dishes – Asian, savory snacks, cooked cereals).

Data Source	Supporting Agencies	Description of Data Sources
National Health Interview Survey (NHIS) ²²	HHS, CDC, National Center for Health Statistics	NHIS is a health survey conducted using in-person, confidential household interviews. It provides data on the U.S. civilian noninstitutionalized population residing in the 50 states and District of Columbia for analyzing public health trends, assessing prevalence of health conditions, and tracking progress toward achieving national health objectives.
Surveillance, Epidemiology and End Results (SEER) ²³	HHS, National Institutes of Health (NIH), National Cancer Institute, Division of Cancer Control and Population Sciences	The SEER Program is the authoritative source for cancer statistics in the U.S. population. SEER collects and publishes cancer incidence and survival data from population-based cancer registries. The 22 geographic areas of data collection from the U.S. states and American Indian/Alaska Native communities are representative of the demographics of the U.S. population.
National Vital Statistics System (NVSS) ²⁴	HHS, CDC, National Center for Health Statistics	NVSS collects and disseminates the most complete data on U.S. births and deaths from vital registration systems across 50 states, 2 cities (District of Columbia and New York City), and 5 territories.
National Immunization Surveys (NIS) ²⁵	HHS, CDC, National Center for Immunization and Respiratory Diseases	NIS are a group of telephone surveys that provide current, population-based, state and local area estimates of vaccination coverage among children ages 19 through 35 months and adolescents 13 through 17 years. The surveys collect data through telephone interviews with parents or guardians in all 50 U.S. states, the District of Columbia, and some U.S. territories (U.S. Virgin Islands, Puerto Rico, Guam).
Pregnancy Risk Assessment Monitoring System (PRAMS) ²⁶	HHS, CDC, Division of Reproductive Health	PRAMS is a population-based surveillance system that collects data on maternal health and behaviors before, during, and immediately after pregnancy from 46 states, 2 cities (District of Columbia and New York City), and 2 territories (Northern Mariana Islands and Puerto Rico).

Transparency of the Data Analysis Work

Data Analysis Plan

Prior to conducting new analyses, federal staff developed a Federal Data Analysis Plan to comprehensively describe the data analysis process and strategy and specify the analyses that would be used to support the Committee in answering the data analysis questions.²⁷ The Committee contributed to the data analysis plan, including providing feedback on how health equity should be considered across data analyses. The plan, including updated versions, was posted on [DietaryGuidelines.gov](https://www.dietaryguidelines.gov).²⁸ The public was encouraged to review and submit written comments to the Committee on its work, including the data analysis plan, throughout its term. The final version of the data analysis plan was posted to [DietaryGuidelines.gov](https://www.dietaryguidelines.gov) to accompany the Committee's Scientific Report.

Data Analysis Reports and Supplements

The evidence for each data analysis question was transparently documented in 1 or more reports, which are posted on DietaryGuidelines.gov.²⁸⁻³² Each data analysis report summarizes detailed results for each analysis examined by the Committee, as well as references to data source methodology, data publications, and data analysis supplements.³³ The data analysis supplements include data tables with results for analyses that the Committee requested from federal interagency partners (ARS, CDC, and NIH). The chapters included in Part D of this report briefly summarize findings from the Committee's data analysis work, and the full data analysis reports and supplements are posted on DietaryGuidelines.gov.

Expert Review of the Data Analysis Reports and Supplements

Data source experts from federal interagency partners who were familiar with methodologies for the data collection and analyses reviewed all federal data analysis reports and supplements to provide feedback on their accuracy, clarity, transparency, and organization. Following expert review, data analysis staff shared comments with the Committee and revised the reports and supplements as needed.

Health Equity Considerations

Health equity considerations were incorporated into each step of the data analysis process, including identification of data needs, development of the data analysis plan, and refinement of sociodemographic groups to be examined. Dietary intakes, dietary patterns, and prevalence of health conditions within the sociodemographic groups were identified, summarized, and synthesized as part of the Committee's data analyses and used to inform conclusions and future recommendations.

These efforts built on the work of the 2020 Committee, which examined data by sociodemographic groups including sex, race and/or ethnicity, socioeconomic status (e.g., family income, poverty to income ratio (PIR), education), and age/life stage. Given the 2025 Committee's focus on health equity, additional sociodemographic variables were proposed and considered, and socioeconomic status was expanded to socioeconomic position to capture the relation to poverty level. In proposing new variables to examine, the Committee emphasized the need for prioritization of variables that would be most meaningful to its work. Selection of these variables also relied on the presence of a sufficient sample size to conduct these population group analyses. In light of those considerations, the 2025 Committee prioritized the following variables that were in addition to those examined by the 2020 Committee: household food security category, current household Supplemental Nutrition Assistance Program (SNAP) participation, and current child participation in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) program.

Other variables that were considered by the 2025 Committee included: country of birth (i.e., U.S.-born or non-U.S.-born), health insurance coverage and type, geographic location (i.e., living in urban or rural areas), social vulnerability index, household emergency food benefits (receipt in the last 12 months), disability status (i.e., disability or no disability), language spoken at home as a proxy for acculturation (i.e., English, Spanish, or other language), and length of time in the United States. Some of these variables were included in certain analyses when available (e.g., country of birth, health insurance coverage and type, geographic location, and disability status), while others were determined to be a lower priority or

unfeasible (e.g., social vulnerability index, household emergency food benefits, language spoken at home, length of time in the United States).

Data Analysis Team

The federal data analysis team and interagency partners supported the Committee's work to answer specific topics and questions. The team and partners were federal scientists with advanced degrees in nutrition, statistics, and epidemiology from the following Departments and agencies:

- HHS
 - ODPHP; Office of the Assistant Secretary for Health
 - National Cancer Institute; NIH
 - National Center for Health Statistics; CDC
- USDA
 - CNPP; Food and Nutrition Service (FNS); Food, Nutrition, and Consumer Services
 - ARS; Research, Education, and Economics

Systematic Reviews

Systematic reviews are described in [Box C.5](#). The Committee, with support from USDA's NESR team, conducted original and/or updated existing systematic reviews using NESR's rigorous, transparent methodology. The Committee also used NESR methodology to conduct an evidence scan, described earlier in this chapter.



Box C.5: Systematic Reviews

are gold-standard evidence synthesis projects that answer nutrition questions of public health importance using systematic, transparent, rigorous, and protocol-driven methods to search for, evaluate, synthesize, and grade the strength of the eligible body of evidence. To find out more, go to <https://nesr.usda.gov>.

The NESR methodology used by the Committee for conducting systematic reviews includes developing a systematic review protocol, searching and screening for literature, extracting data and assessing risk of bias, synthesizing evidence, developing conclusion statements, grading the evidence, and recommending future research.

NESR evidence scans use systematic methods to search, screen, and describe the type and amount of evidence on a topic, but differ from systematic reviews in that they do not answer a research question by synthesizing results and developing graded conclusion statements. The complete NESR methodology for conducting systematic reviews and evidence scans is described in detail in a manual posted on the NESR website: <https://nesr.usda.gov>.

The NESR systematic review process is highly collaborative and designed to leverage the Committee's expertise, with clear delineations between staff and Committee roles to ensure that the Committee was responsible for all substantive decision-making. The Committee developed its protocols, synthesized the evidence, developed and graded the strength of evidence underlying conclusion statements, and made research recommendations. The NESR team supported the Committee by completing the most time- and resource-intensive steps of the process, which included executing the Committee's protocols. NESR librarians developed comprehensive literature search strategies that were externally peer-reviewed. NESR analysts screened articles, extracted data, assessed risk of bias, and prepared data for the Committee to synthesize. This collaborative approach ensured that the Committee was fully responsible for the results of its systematic reviews and had robust support from the NESR team to complete a large scope of work within established timelines.

Continuous Quality Advancement

NESR has maintained a robust continuous quality advancement (CQA) program since its inception. Through its CQA program, NESR routinely evaluates and refines its methodology and tools to ensure that NESR's process remains state-of-the-art. CQA work results in timely updates to the NESR methodology manual, procedure, and training materials. For example, CQA work to prepare for establishment of the 2025 Committee resulted in the addition of meta-analysis methodology for use by the 2025 Committee, as well as development of a continuous evidence monitoring (CEM) process that uses established systematic review protocols to periodically search for, screen, and prepare evidence for future systematic reviews. NESR used CEM prior to the establishment of the 2025 Committee to monitor the evidence on high priority questions. The results of this monitoring helped the Committee determine if sufficient new research was available to update existing NESR systematic reviews.

Transparency of the Committee's Systematic Reviews and Evidence Scan

Methodology

NESR's methodology manual provides detailed information about NESR's methodology and processes, including those for conducting and updating systematic reviews and evidence scans. NESR's methodology manual is available at the NESR website: <https://nesr.usda.gov>.

Protocols

The Committee developed protocols that included an analytic framework, inclusion and exclusion criteria, and a synthesis plan to answer each question. Literature search strategies were available upon request. All protocols and any revisions to protocols were presented by the Committee at its meetings and posted to the NESR website on a dedicated web page that will permanently house all NESR protocols, including those of the Committee (<https://nesr.usda.gov/protocols>). The public was encouraged to review and submit written comments to the Committee on its work, including on its protocols, throughout the Committee's term.

Systematic Review Reports

Each systematic review was transparently documented in a report that included a plain language summary, an abstract, and the full systematic review. The reports were posted on NESR's website at the same time that this Scientific Report was released. Each systematic review report presented comprehensive details of the systematic review, including a summary of NESR's methodology and the protocol implemented for that review, the literature search strategy and search results, the description and synthesis of the evidence reviewed, and the conclusion statements and grades along with the rationale supporting them. The evidence scan was similarly documented. The chapters in Part D of this report briefly summarize the findings from the Committee's systematic reviews and evidence scan, and the full systematic review and evidence scan reports are linked within their respective chapters and posted on NESR's website: <https://nesr.usda.gov/2025-dietary-guidelines-advisory-committee-systematic-reviews>.

Peer Review of the Committee's Systematic Reviews

All of the Committee's systematic reviews underwent external peer review in a process coordinated by staff from the National Institutes of Health (NIH). As a research center, NIH has access to nutrition scientists and networks with professional organizations to support peer review. Additionally, while within HHS, those coordinating the peer review were separate from the staff supporting the Committee's work. NIH staff identified potential peer reviewers through outreach to a variety of professional organizations to select academic reviewers from U.S. colleges and universities across the country with a doctorate degree, including MDs, and expertise specific to the questions being reviewed. This reflects a change from the peer review process used for the 2020 Committee and is responsive to recommendations from a NASEM panel. In 2020, federal scientists who were not involved in the development of the *Dietary Guidelines* were served as peer reviewers. For the 2025 Committee's process, all peer reviewers were external to the *Dietary Guidelines* process; therefore, current Committee members and federal staff who supported the Committee, or who were involved in the development of the *Dietary Guidelines*, were not eligible to serve as peer reviewers. Federal scientists who were not involved in the development of the *Dietary Guidelines* were eligible to serve as peer reviewers. Past members of Dietary Guidelines Advisory Committees were eligible to serve, as long as they were not serving on the 2025 Committee.

NIH staff assigned each systematic review to be peer-reviewed by at least 2 reviewers. Peer reviewers are listed in **Appendix F-5: Acknowledgements**. The peer review process was anonymous and confidential in that the peer reviewers were not identified to the Committee members or NESR staff, and in turn, the reviewers were asked not to share or discuss the review with anyone. Peer reviewers were made aware that per USDA, FNS agency policy, all peer reviewer comments would be summarized and made public, but comments would not be attributed to a specific reviewer.

Before peer review began, NESR staff recorded a video orientation to the NESR systematic review methodology, which NIH staff shared with the peer reviewers. Peer review occurred after draft conclusion statements were discussed by the Committee at its third, fourth, fifth, and sixth meetings. Following Committee discussion at the respective meetings, NESR staff sent drafts of the Committee's systematic

reviews to NIH staff, who assigned and distributed the reviews to peer reviewers. Peer reviewers were asked to complete their review within 14 days. Each peer reviewer received drafts of the full systematic review for their assigned question(s), and were provided with the following questions to guide their review and feedback:

- Description of the Evidence, Synthesis of Evidence, and Assessment of the Evidence: Are these sections clearly written and organized so that they provide transparency to the body of evidence reviewed?
- Conclusion Statement(s) and Grade(s): Are the conclusion statement(s) and grade(s) supported by the body of evidence reviewed?
- Research Recommendations: Would you suggest any additional research recommendations be made to encourage future research that can inform agency programs, guidance, and/or policy?

Following peer review, NIH staff returned anonymized peer reviewer comments to NESR staff, who shared the comments with the Committee. The Committee reviewed and discussed comments and revised the systematic reviews, as needed, based on the discussion. NESR staff then sent NIH staff the Committee's responses to each peer review, and NIH staff shared responses with the respective peer reviewers.

Health Equity Considerations

The Committee considered health equity throughout the NESR systematic review process, and these considerations align with how other organizations have integrated equity in their review processes, including the Cochrane Equity Methods for systematic reviews and the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) Equity-Extension.^{34,35} These resources provide recommendations for conducting and reporting equity-focused systematic reviews. Cochrane Equity's recommendations are found in Chapter 16 of Cochrane's larger methodology handbook and discuss considerations for each step of the systematic review process.³⁴ PRISMA provides guidance on reporting the methods and findings of evidence synthesis projects to promote transparency and reproducibility. The PRISMA Equity-Extension, published in 2012, focuses on reporting standards for health equity.³⁶

Examples of how the Committee incorporated health equity considerations into its systematic reviews and evidence scan include:

Consideration of Key Confounders

Each systematic review protocol considered health equity variables as potential key confounders of relationships between exposures and outcomes of interest. For example, race, ethnicity, and socioeconomic position were identified as key confounders for all systematic reviews, given clear evidence of health disparities in nutritional health and diet-related chronic diseases based on economic, social, and/or environmental disadvantage. Descriptive data on key confounders and other health equity-related variables were extracted, where possible, and considered when assessing risk of bias due to confounding.

The Committee then considered these data and the risk of bias assessments as it synthesized the evidence and developed and graded conclusion statements.

Generalizability

The NESR systematic review process addresses health equity by including generalizability of the evidence as 1 of 5 elements considered when grading evidence. The Health Equity Working Group provided the Committee with guidance for consistent evaluation of generalizability when grading the strength of evidence. The Committee considered the extent to which study participants, interventions and/or exposures, comparators, and outcomes were representative and inclusive of the diversity of the U.S. population. While generalizability does not equate to health equity, it is critical to the goal of representation—ensuring that the science provides the basis of fair and just opportunities for health for everyone. Because the *Dietary Guidelines* informs federal nutrition policies and programs in the United States, it is imperative to consider the generalizability of evidence included in systematic reviews to population groups served by those policies and programs.

Food Pattern Modeling

Food pattern modeling (FPM) is described in [Box C.6](#). The Committee used FPM to complete analyses in 9 food pattern modeling protocols and 2 additional protocols that were exploratory analyses. The results informed the Committee’s conclusions for its overarching question: Considering each life stage, should changes be made to the USDA Dietary Patterns (Healthy U.S.-Style, Healthy Mediterranean-Style, and/or Healthy Vegetarian), and should additional Dietary Patterns be developed/proposed based on:

- Findings from systematic reviews, data analysis, and/or food pattern modeling analyses; and/or
- Population norms, preferences, or needs of the diverse communities and cultural foodways within the U.S. population?



Box C.6: Food Pattern Modeling

is a methodology used to illustrate how changes to the amounts or types of foods and beverages in a dietary pattern might affect meeting nutrient needs and is used to develop quantitative dietary patterns that reflect health-promoting patterns identified in systematic reviews and meet energy and nutrient needs.

To answer the question, the Committee developed protocols that describe how FPM analyses would be used to examine the implications of changes to the types and amounts of foods and beverages in a dietary pattern on meeting nutrient requirements. The results of the individual FPM analyses were considered together along with evidence from systematic reviews and data analysis and translated into a dietary pattern(s), which reflects health-promoting patterns identified in systematic reviews, meets recommendations for nutrient intake, and considers dietary intakes of the U.S. population to ensure the Committee’s advice is practical, relevant, and achievable.

The FPM process is highly collaborative and designed to leverage the Committee's expertise, with clear delineations between staff and Committee roles to ensure that the Committee was responsible for all substantive decision-making. The Committee developed its protocols, reviewed and synthesized evidence across all FPM analyses along with data analysis and systematic review evidence, developed synthesis statements and conclusion statements, and made research recommendations. The FPM team was responsible for the most resource-intensive steps of the FPM process: conducting each FPM analysis detailed in the Committee's protocols, except for the analyses identified by the Committee in the diet simulations protocol. Diet simulation analyses were conducted by a third-party contractor and were overseen by the FPM team. The FPM team was comprised of nutrition scientists from across CNPP and data analysts in the Nutrition and Economic Analysis Branch at CNPP within FNS. This collaborative approach ensured that the Committee was fully responsible for the results of its FPM analyses and had robust support from the FPM team to complete a large scope of work within established timelines.

Continuous Quality Advancement

To prepare for the establishment of the 2025 Committee, HHS and USDA collaborated on CQA efforts for FPM, focusing on methods to better reflect the complex interactions involved, variability in dietary intakes, and range of possible healthful diets. The interagency Food Pattern Modeling Interest Group (FPM IG) was formed in 2021 to increase the diversity of federal staff directly involved in the process to develop healthy dietary patterns. Federal staff evaluated the analytic methods and development of data inputs and constraints for FPM by comparing them to methods used to develop guidance in other countries and to modeling exercises described in scientific publications. The FPM IG also collaborated with other federal workgroups, such as the NIH Nutrition and Health Disparities Implementation Working Group and the Interagency Committee on Human Nutrition Research. The FPM IG prioritized 2 efforts from its work—food composition data and addition of a systems science approach (i.e., diet simulations) to complement existing FPM methods.³⁷

Food Composition Data

Prior to the 2025 FPM process, the USDA nutrient composition database called Standard Reference (SR) was used for FPM analyses.³⁸ The SR database is still available on USDA's FoodData Central,³⁹ but its final release was in April 2018. The final version of SR is called SR Legacy and it contains historic data on food components including nutrients derived from analyses, calculations, and published literature. Due to retirement of the SR database, the 2025 FPM analyses switched from using SR as the sole nutrient database for its analyses to using the Food and Nutrient Database for Dietary Studies (FNDDS),¹⁹ with few exceptions. SR Legacy is still used for certain foods that are unavailable in FNDDS and comprises just 2 out of 387 representative food-item cluster pairs. The version of FNDDS used for the 2025 FPM process was FNDDS 2017-2018. Although FNDDS 2019-2020 was released during the 2025 FPM process, its companion database that is essential to the FPM process, the Food Patterns Equivalents Database (FPED), 2019-2020 was not released due to the impacts of the COVID-19 pandemic on the WWEIA, NHANES survey. Therefore, the FNDDS 2017-2018 and corresponding FPED 2017-2018 were used for all 2025 FPM analyses.

Diet Simulations

The FPM IG conducted an evidence scan to explore methodologies used by international counterparts to understand how other research groups have considered intake variability in diverse populations. The results of that evidence scan revealed that the addition of simulated diet methodologies may provide another opportunity to consider intake variability in addition to existing rigorous FPM methods. The FPM IG prioritized diet simulation analyses as an avenue to better consider intake variability and evaluate the range of possible daily diets to meet both recommended patterns and nutritional goals by generating thousands of 7-day diets. The addition of this methodology to the FPM process further advances how dietary patterns are evaluated for their flexibility when considering variation in dietary intakes, adding to the rigor of FPM. The addition of this systems science approach allowed the Committee to examine and consider refinement of the modified 2020 HUSS Dietary Pattern to ensure the final pattern(s) proposed to the Departments were inclusive of a broader range of dietary intakes.

Transparency of the Committee's Food Pattern Modeling Analyses

Methodology

FPM analyses (with the exception of diet simulations) focused on modifying the calculation of nutrient profiles for food groups and subgroups, and subsequent analyses examined modifications to the quantities of each food group and subgroup. The USDA Dietary Patterns included in the *Dietary Guidelines for Americans, 2020-2025* provided amounts of 5 major food groups and subgroups, including:

- Fruits
- Vegetables: Dark Green; Red and Orange; Beans, Peas, and Lentils^a; Starchy; and Other
- Dairy and Fortified Soy Alternatives
- Grains: Whole Grains and Refined Grains
- Protein Foods: Meats, Poultry, and Eggs; Seafood; Nuts, Seeds, and Soy products

Below are abbreviated summaries of the 6-step methodology applied to conduct all FPM analyses, except for diet simulations. For full details pertaining to how these methods were operationalized, see the food pattern modeling report titled, “*Should foods and beverages with lower nutrient density (i.e., those with added sugars, saturated fat, and sodium) contribute to item clusters, representative foods, and therefore the nutrient profiles for each food group and subgroup used in modeling the USDA Dietary Patterns? Food Pattern Modeling Report.*”⁴⁰

Step 1: Establish energy levels

The updated 2023 Dietary Reference Intakes (DRI) predictive equations,⁴¹ newly available to the 2025 Committee, were used to calculate Estimated Energy Requirements (EER) for each age-sex group and for 3 age groups specific to pregnancy and lactation (14-18 years, 19-30 years, and 31-50 years). Each EER

^aBeans, Peas, and Lentils are typically modeled as Vegetables, but can also be included and modeled in the Protein Foods group. Food pattern modeling protocols and reports noted how Beans, Peas, and Lentils were modeled.

calculation was based on sex, age, height, weight, level of physical activity, and life stage, and during pregnancy, gestational weeks. For individuals ages 19 years and older, the established energy levels for FPM analyses used the EER calculation specific to inactive individuals at the median height and a normal weight (BMI 22.5 kg/m² for males, BMI 21.5 kg/m² for females) for each age-sex group, rounded to the nearest 200 kilocalorie (kcal) level. This approach results in a more tailored EER for each age-sex group with consideration for variation in heights and weights, which differed from the approach of previous Committees, which used 1 reference weight (healthy BMI) and height (median) for all adult males (70 inches and 154 pounds) and all adult females (64 inches and 126 pounds). For children and adolescents ages 2 to 18 years, median height and the 50th percentile BMI-for-age were used, with the EER rounded to the nearest 200 kcal level. Previous Committees used median height and weight for children and adolescents. For young children ages 12 to 24 months, EERs from the DRI report using median weight and length were used and rounded to the nearest 100 kcal level.⁴¹ The corresponding calories were then used to evaluate the patterns against nutritional goals.

Step 2: Establish nutritional goals

Specific nutritional goal quantities for a dietary pattern were set according to energy level and based on the DRI specific to the age-sex group(s) for which the pattern is designed. For individual FPM analyses, the assigned energy level for each age-sex group and life stage was tested against the established nutritional goals for that age-sex group or life stage. Dietary patterns were evaluated against goals for total energy, fat, protein, carbohydrates, 3 fatty acids, 12 vitamins, 8 minerals, added sugars, and fiber based on DRI reports released between 1997 and 2023 and on quantitative recommendations in the *Dietary Guidelines for Americans, 2020-2025*.

Step 3: Establish food groupings and amounts

Existing food groups and subgroups in the USDA Healthy U.S.-Style (HUSS) Dietary Pattern and the Healthy Vegetarian Dietary Pattern for ages 12 through 23 months and ages 2 years and older (published in the *Dietary Guidelines for Americans, 2020-2025*) were used in analyses. The existing patterns served 2 purposes in the analyses: (1) as a reference and/or (2) as the starting point in analyses that investigate implications to nutritional goals when quantities of food groups and/or subgroups are increased or reduced.

Step 4: Determine the amounts of nutrients that would be obtained by consuming various foods within each food group and subgroup

A composite system was used to calculate the anticipated energy and nutrient content, or nutrient profile, of each food group or subgroup as described below. All foods reported by individuals ages 1 year and older as part of WWEIA, NHANES 2017-2018 were disaggregated into their ingredients. Some foods and beverages that are lower in nutrient density were excluded from the set of foods used to calculate nutrient profiles. For more information on the foods and beverages excluded by the Committee, please see **Part D. Chapter 9: Nutrient Profile Development**. Similar ingredients were aggregated into food item clusters. A nutrient-dense form of the food was selected as the representative food for each item cluster.

The proportional intake of each item cluster within each food group or subgroup was calculated and used to compute a weighted average of nutrient-dense forms of foods representing each food item cluster.

Step 5: Evaluate the implications for meeting nutritional goals when modifying food group and subgroup quantities within the HUSS

Generally, food group and subgroup quantities were modified (e.g., from the quantity currently in the HUSS pattern and incrementally reduced to zero) and implications of these quantity modifications on meeting established nutritional goals were evaluated. Each protocol includes objectives that describe the analyses related to such modifications for each food group or subgroup.

Step 6: Iterate and re-evaluate the patterns to align with current or potential recommendations

The Committee used a stepwise, iterative approach to synthesize across analyses and adjust and re-evaluate the dietary patterns based on findings from systematic reviews, data analysis, or FPM analyses, and to examine flexibilities within the patterns.

The Committee interpreted results of food pattern modeling analyses under the premise of 2 key assumptions. First, modeling was based on food group and subgroup nutrient profiles of nutrient-dense foods (i.e., those with the least added sugars, saturated fat, and/or sodium) and proportions of foods and beverages reported in the U.S. population (e.g., proportion of different beans, peas, and lentils). Second, modeling assumed population-wide compliance with quantitative food and beverage recommendations of the dietary patterns under review. As with other types of modeling, food pattern modeling is hypothetical and does not predict the behaviors of individuals.

The Committee considered FPM analyses along with evidence from data analysis and systematic reviews to develop a conclusion statement that answered the overarching question:

Considering each life stage, should changes be made to the USDA Dietary Patterns (Healthy U.S.-Style, Healthy Mediterranean-Style, and/or Healthy Vegetarian)? And, should additional Dietary Patterns be developed/proposed based on:

- Findings from systematic reviews, data analysis, and/or food pattern modeling analyses; and/or
- Population norms, preferences, or needs of the diverse communities and cultural foodways within the U.S. population?

Protocols

The Committee developed 9 protocols that each included an analytic framework and analytic plan to answer the food pattern modeling question. The Committee also conducted 2 exploratory FPM analyses. The Committee presented all protocols and revisions at its meetings, and the protocols were also posted on DietaryGuidelines.gov. The public was encouraged to review and submit written comments to the Committee on its work, including protocols, throughout its term.

The analytic plans for the protocols included the element(s) to be modified and examined in the FPM analyses:

- 2 protocols detailed analyses to help the Committee develop the nutrient profiles used in subsequent analyses (Basis Nutrient Profiles Protocol and WWEIA Population Groups Protocol),
- 5 protocols detailed analyses that modified individual food groups and subgroups (Fruits Protocol, Vegetables Protocol, Grains Protocol, Protein Foods Protocol, and Dairy and Fortified Soy Alternatives Protocol),
- 1 protocol detailed analyses that evaluated the dietary pattern component called “limits on calories for other uses” and the hypothetical inclusion of foods or beverages lower in nutrient density (Ranges of Nutrient Density Protocol),
- 2 protocols detailed exploratory analyses that reduced or excluded specific food groups, subgroups, or dietary components (Removing Animal-Source Foods Protocol and Reducing Carbohydrate-Containing Foods Protocol), and
- 1 protocol detailed diet simulation analyses that evaluated the implications on nutritional goals if different combinations of individual foods and beverages were consumed to meet the recommended amounts for each food group and subgroup (Diet Simulations Protocol).

The Committee discusses results of these analyses in **Part D. Chapter 9: Nutrient Profile Development**, **Part D. Chapter 10: Food Group and Subgroup Analysis**, and **Part D. Chapter 11: Diet Simulations**.

Food Pattern Modeling Reports

The FPM reports available on DietaryGuidelines.gov provide the full analytical methods used to conduct and reproduce the modeling analyses, detailed results for each analysis, and the synthesis or summary statements for the analyses.

Peer Review of the Committee’s Food Pattern Modeling Reports

Like the Committee’s systematic review reports, all FPM reports underwent external peer review in a process coordinated by staff from NIH. Peer reviewers were identified using a similar process that NIH staff used to identify peer reviewers for the Committee’s systematic reviews. NIH staff assigned each FPM report to be peer-reviewed by at least 2 independent reviewers. The peer review process was anonymous and confidential in that the peer reviewers were not identified to the Committee members or FPM staff, and in turn, the reviewers were asked not to share or discuss the review with anyone. Peer reviewers were made aware that per USDA, FNS agency policy, all peer reviewer names would be released, and comments would be summarized and made public, but comments would not be attributed to a specific reviewer. Peer reviewers are listed in **Appendix F-5: Acknowledgements**.

Before peer review began, FPM staff recorded a video orientation to the FPM process, which NIH staff shared with the peer reviewers. Peer review occurred after draft synthesis or summary statements were discussed by the Committee at its fifth and sixth meetings. Following Committee discussion at the respective meetings, FPM staff sent drafts of the FPM reports to NIH staff, who assigned and distributed

the reviews to peer reviewers. Peer reviewers were asked to complete their review within 14 days. Each peer reviewer received drafts of the full FPM report along with Excel workbooks detailing all analysis results and a video orienting them to the Excel workbooks for their assigned topic, and were provided with the following questions to guide their review and feedback:

- Description of the Overview, Food Pattern Modeling Analytic Process – In Brief (and associated Steps), Objective Methods, and Objective Results: Are these sections clearly written and organized so that they provide transparency to the methodology, operationalization of the methods, and the results?
- Synthesis (or Summary) Statements: Are the Synthesis (or Summary) Statements supported by the findings from the analyses?
- Research Recommendations: Would you suggest any additional research recommendations be made to encourage future research that can inform agency programs, guidance, and/or policy?

Following peer review, NIH staff returned anonymized peer reviewer comments to FPM staff, who shared the comments with the Committee. The Committee reviewed and discussed comments and revised the FPM reports, as needed, based on the discussion. FPM staff then sent NIH staff the Committee's responses to each peer review, and NIH staff shared responses with the respective peer reviewers.

Health Equity Considerations

The Committee identified representation of population groups in the dietary patterns under review as a topic to be consistently prioritized and integrated into all aspects of food pattern modeling or discussed as future recommendations. Thus, health equity considerations were incorporated into each step of the food pattern modeling process, including refinement of food pattern modeling methods that considered the full population, along with specific population groups (e.g., nutrient profile development and application), the identification of analyses to support the overarching question (e.g., food group protocols), and the addition of a systems modeling approach that provided the opportunity to evaluate intake variability and flexibility of the dietary pattern(s) (e.g., diet simulations process).

Nutrient Profile Development

Each food group and subgroup within the USDA Dietary Patterns has a defined nutrient profile that is the foundation of any FPM analysis. Prior FPM analyses used nutrient profiles that considered the proportions of foods and beverage types consumed in the total population. The Committee suggested that this methodology could potentially mask differences related to factors that are clearly associated with health equity and population characteristics such as food access, food preferences and choices, and cultural foodways. To alleviate this concern, the Committee identified an additional approach to developing a nutrient profile that considered both the proportional consumption of the total population and reflected dietary intakes of populations groups represented in WWEIA, NHANES. The Committee decided that this protocol would be implemented prior to any other FPM protocols so that its findings could inform subsequent analyses if differences were meaningful. The Committee evaluated these nutrient profiles and

considered the representation and variations in dietary intake when evaluating how proposed dietary patterns meet nutritional goals for each age-sex group. The Committee prioritized this step as essential to promoting a dietary pattern(s) that strives to be flexible for all and can be implemented by population groups across the United States. As part of the final synthesis analyses, proposed patterns were examined against nutritional goals using the population-level nutrient profile and the individually calculated profiles for population groups classified by race and Hispanic origin and income. For more information on the results and outcome of this protocol, see **Part D. Chapter 9: Nutrient Profile Development**. The Committee also identified recommendations around this topic for consideration during future analyses (see **Part E. Chapter 2: Future Directions**).

Food Group Protocols

Additional protocols were developed based on Committee deliberations, feedback from federal agencies, and in response to public comments that focused on quantitative guidance around specific food groups and subgroups. These protocols focused on examining flexibilities to the dietary patterns with the goal of enhancing representation. For instance, part of the rationale for evaluating hypothetical reductions and/or modifications to the Dairy and Fortified Soy Alternatives food group was the prevalence of lactose malabsorption and of cow milk allergies in the U.S. population. For each of the food group protocols the Committee established, it sought to examine the potential flexibility for a recommendation(s) that more equitably represent the range of population group norms, preferences, and needs. The Committee also identified recommendations around these topics for consideration during future analyses (see **Part E. Chapter 2: Future Directions**).

Diet Simulations Process

The diet simulations protocol was developed to evaluate how well the quantitative dietary patterns recommended by the Committee achieved nutritional goals when considering variability in consumption. Employing a systems science approach, the overall goal of the diet simulations protocol was to construct at least 500 7-day diets for each age-sex group by randomly selecting different combinations of nutrient-dense foods and beverages in the amounts recommended for each age-sex group. The final analysis constructed 2,500 7-day diets for each age-sex group. The addition of this systems science approach allowed for examination and potential refinement of the proposed dietary pattern(s), which increased the Committee's confidence that the final pattern(s) recommended to the Departments were inclusive of a broader range of dietary intakes.

As the Committee worked on the diet simulations protocol, it learned of a newly implemented project within FNS and CNPP that was contracting with food and nutrition experts with lived experiences in cultural foodways to identify relevant foods in the FNDDS database for individual population groups. The Committee inquired about the potential use of these data to conduct additional population group-specific diet simulations. After discussion, the Committee prioritized pilot diet simulations using food composition data coded as relevant to 3 American Indian populations (Navajo Nation, Blackfeet, and Cherokee) and Alaska Native populations. The Committee also identified recommendations around this topic for consideration during future analyses in **Part E. Chapter 2: Future Directions**.

Committee Report Development and Structure

The Committee began work on its Scientific Report in 2023. Staff drafted a tentative outline, which was reviewed by the Committee Chair, Vice Chair, and all Subcommittee Chairs and then presented to the full Committee. The outline provided a useful framework and context for the Committee during its review of the science and as it began writing this report. The Committee began drafting portions of its report in early spring 2024 and continued through October 2024.

The Committee integrated evidence across data analysis, systematic reviews, and food pattern modeling as it developed this report. Because each Committee member served on 2 Subcommittees, and at least 1 member from each Subcommittee was part of the Health Equity Working Group, integration of evidence across Subcommittees was discussed during Subcommittee meetings and as chapters were drafted. Additionally, staff facilitated integration between data analysis and systematic reviews by providing relevant data as members began drafting chapters focused on its systematic reviews. Further, members involved in food pattern modeling were all also involved in systematic reviews and shared relevant insights as they prioritized and interpreted food pattern modeling analyses. Finally, prior to, during, and after Meeting 6, members held a series of integration discussions that included representation from across Subcommittees and Working Groups. These included discussions focused on integration across dietary patterns systematic reviews; integration across all systematic reviews on dietary patterns and specific foods and beverages; and integration across systematic reviews, food pattern modeling, and data analysis. Ultimately, the findings and advice in this Scientific Report reflect the entire body of evidence the Committee reviewed.

A general description of writing duties and review process for each report section is described below:

- **Part A. Executive Summary** was drafted by the Science Writer following her editorial review of each chapter.
- **Part B. Chapter 1: Introduction** was drafted by the Chair and Vice Chair with support from additional Committee members and federal staff.
- **Part C. Methodology** was drafted by federal staff with support from Committee members.
- **Part D. Evidence on Diet and Health** consists of 11 science-based chapters organized by topic and scientific approach that mirror the Subcommittee structure the Committee used to conduct its review of the science: Data Analysis, Dietary Patterns and Specific Dietary Components Across Life Stages, Dietary Practices and Behaviors in Birth through Childhood, Strategies for Individuals and Families Related to Diet Quality and Weight Management, and Food Pattern Modeling. Part D chapters, along with **Part B. Chapter 2: Health Equity and Nutrition**, were drafted by Committee members with support from federal staff. Meta-Analysis Working Group members contributed to drafting the chapters that included questions answered using systematic reviews with meta-analysis. Once developed, these chapters underwent editorial review and were shared for Committee review. To ensure a focused review of each

chapter, 2 Committee members, who were not involved in drafting the chapter, conducted a cross-review of each chapter.

- **Part E. Integrating the Evidence** consists of 2 chapters, Overarching Advice to the Departments and Future Directions. **Chapter 1: Overarching Advice to the Departments** contains the Committee's overarching advice for updating the next edition of the *Dietary Guidelines* based on a synthesis of key findings and themes from the Part D chapters and provides the recommended dietary pattern to be considered by the Departments when drafting the next edition of the *Dietary Guidelines*. The chapter was led by the Chair and Vice Chair and considered iterative input and feedback from members across the Committee's Subcommittees and Working Groups and findings from all 3 approaches to examine the evidence. **Chapter 2: Future Directions** was drafted by members from each Subcommittee and Working Group to highlight research recommendations that could advance knowledge in nutrition science and inform future federal food and nutrition guidance.

The Committee's seventh meeting focused on its Scientific Report and provided an overview of the Committee's scientific findings and advice to the Departments. Committee members reviewed the draft report before Meeting 7 and made decisions for finalizing the report based on Committee member review and discussion at the meeting. This report, submitted to the Secretaries of HHS and USDA, reflects the consensus of the full Committee.

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