

Response to the National Academies of Sciences, Engineering, and Medicine: *USDA's Nutrition Evidence Systematic Review (NESR)*

In 2016, Congress directed the Secretary of Agriculture to engage the National Academies of Sciences, Engineering, and Medicine (National Academies) to conduct a comprehensive study of the process used to establish the Dietary Guidelines. The National Academies' study findings are available on its website.

The study culminated in two reports, one on the process for selecting the Dietary Guidelines Advisory Committee (Advisory Committee) and another on the remaining aspects of the Dietary Guidelines development process.

Below are recommendations from the National Academies' study that relate to the USDA's Nutrition Evidence Systematic Review (NESR), formerly known as the Nutrition Evidence Library (NEL). These recommendations relate to the methodological approaches to evaluating the scientific evidence, specifically systematic reviews. NESR carefully considered these recommendations and provides responses below.

REPORTS 1 & 2 / Based on its key findings, the National Academies committee identified five values to improve the integrity of a process to develop credible and trustworthy guidelines:

- **Enhance transparency.**
- **Promote diversity of expertise and experience.**
- **Support a deliberative process.**
- **Manage biases and conflicts of interest.**
- **Adopt state-of-the-art processes and methods.**

In addition, the report acknowledges that the process to update the Dietary Guidelines is time- and resource-intensive. Therefore, the National Academies committee recommended that, to the extent possible, a more efficient use of resources ought to be considered to minimize duplication of efforts and simplify the Dietary Guidelines process without endangering its integrity.

Response:

USDA's NESR supports all five values, which are critical to our goal of connecting nutrition science with public health priorities.

- NESR's methodology is rigorous and protocol-driven. It is designed to promote transparency, minimize bias, and ensure the public availability, via www.nesr.usda.gov and peer-reviewed publications, of systematic reviews that are relevant, timely, and high quality.
- NESR projects are completed in a collaborative manner. The NESR team, who has expertise in systematic review methodology, works with a diverse group of external experts that include nutrition scientists, physicians, dietitians, epidemiologists, methodologists, and/or end users of a review.

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- NESR (previously known as NEL) was created in 2008 in response to systematic reviews becoming the state-of-the-art approach for informing scientific consensus statements, clinical and public health guidelines, public health policies and programs, and research agendas. To ensure that NESR's process for conducting systematic reviews remains state-of-the-art, NESR staff are committed to keeping up-to-date on innovations in the field of systematic review methodology, and NESR's methodology and tools are routinely evaluated and refined through a continuous quality advancement process.

REPORT 2 / Recommendation 3. The Secretary of USDA should clearly separate the roles of USDA Nutrition Evidence Systematic Review (NESR) staff and the Dietary Guidelines Scientific Advisory Committee (DGSAC) such that:

- a. The NESR staff plan and conduct systematic reviews with input from technical expert panels, perform risk-of-bias assessment of individual studies, and assist the DGSAC as needed.**
- b. The NESR systematic reviews are externally peer reviewed prior to being made available for use by the DGSAC.**
- c. The DGSAC synthesizes and interprets the results of systematic reviews and draws conclusions about the entire body of evidence.**

Response:

The NESR team will collaborate with the 2020 Advisory Committee to conduct systematic reviews.

The roles of the NESR team will be as follows:

- Facilitate all aspects of planning, conducting, and documenting the work necessary for timely execution of the systematic reviews in accordance with NESR methodology. This includes:
 - Drafting an analytic framework that describes key parts of the systematic review question (e.g., the population, food- and nutrition-related intervention or exposure, and outcomes of interest)
 - Establishing inclusion and exclusion criteria that specify the appropriate types of studies to review
 - Searching for and screening studies, and
 - Extracting data and assessing risk of bias for each study included in a systematic review.
- Develop, implement, refine, and document the literature search strategies.

The roles of the 2020 Advisory Committee will be as follows:

- Review and refine the analytic framework and inclusion and exclusion criteria drafted by NESR
- Synthesize the body of evidence
- Draw conclusions that answer the systematic review question
- Grade the strength of evidence supporting the conclusions.

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All systematic reviews conducted by the 2020 Advisory Committee will undergo a formal, external peer review process. Peer review will be coordinated by the USDA Agricultural Research Service.

The roles and processes outlined above align with Recommendation 3; however, for several reasons, primarily timeline and resource constraints, NESR will not be conducting systematic reviews with input from technical expert panels, rather NESR will be conducting systematic reviews directly with the 2020 Advisory Committee.

However, NESR also recognizes that systematic reviews are time- and labor-intensive to conduct, and that, in some cases, using an existing NESR systematic review to answer a question can prevent duplication of effort and promote time and resource management. NESR has previously collaborated with expert groups to conduct a number of systematic reviews on questions relevant to the 2020 Advisory Committee's work. Therefore, when possible, NESR will identify opportunities to leverage these relevant, timely, high-quality, and transparently documented existing NESR reviews. When an existing NESR review(s) is identified, NESR will facilitate the Committee's review and synthesis of the existing review(s) to draw conclusions that answer the systematic review question.

REPORT 2 / Recommendation 4. The Secretary of USDA should ensure all Nutrition Evidence Systematic Review (NESR) systematic reviews align with best practices by:

- a. Enabling ongoing training of the NESR staff,**
- b. Enabling engagement with and learning from external groups on the forefront of systematic review methods,**
- c. Inviting external systematic review experts to periodically evaluate the NESR's methods, and**
- d. Investing in technological infrastructure.**

Response:

The NESR team acknowledges that systematic review science and supporting technologies evolve continuously. The field of nutrition science is also progressing in areas related to the design, conduct, and analysis of food- and nutrition-related research.

Therefore, to ensure that the methods NESR uses to conduct systematic reviews align with best practices, NESR supports continuous quality advancement efforts to evaluate and refine NESR's processes.

NESR's continuous quality advancement initiative involves enhancing staff knowledge and skills through:

- ongoing training and professional development,
- leveraging the expertise of and collaborating with methodologists from other leading systematic review organizations, such as Cochrane and the Agency for Healthcare Research and Quality, and
- expanding technological infrastructure.

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When appropriate and feasible, refinements to the NESR methodology are carefully planned, tested, and adopted. Some examples of process improvements that NESR is making as part of this effort to support the 2020 Advisory Committee relate to: 1) tools and processes for assessing risks of bias of primary research, as well as systematic reviews and meta-analyses, 2) criteria for grading the strength of evidence underlying the conclusion drawn in NESR systematic reviews, and 3) technology to support efficient and accurate searching for and screening of studies, as well as data extraction.

By aligning with current best practices, NESR's continuous quality advancement initiative promotes efficiency and resource management, and ensures the ongoing high quality and credibility of NESR work.

The *Dietary Guidelines for Americans* serves as the cornerstone of Federal nutrition programs and policies, providing food-based recommendations to help prevent diet-related chronic diseases and promote overall health. According to the National Nutrition Monitoring and Related Research Act of 1990, the Dietary Guidelines is mandated to reflect the preponderance of scientific evidence, and is published jointly by USDA and HHS every five years.



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