American Society for Nutrition
Excellence in Nutrition Research and Practice
www.nutrition.org

Understanding and Using the New *2020-2025 Dietary Guidelines for Americans*

Webinar 2: Utilizing Evidence Gaps Identified by the 2020 Dietary Guidelines Advisory Committee (DGAC) Report to Inform Research Priorities

Speakers

Emily Callahan, MS

Analyst, Center for Nutrition Policy and Promotion

USDA Food and Nutrition Service

Regan Bailey, PhD, MPH, RD, CPH

Member, 2020 Dietary Guidelines Advisory Committee

Professor, Purdue University

Alice H. Lichtenstein, D.Sc.

Vice-Chair, 2015 Dietary Guidelines Advisory Committee

Member, 2000 Dietary Guidelines Advisory Committee

Professor, Tufts University

Moderator

Cheryl A.M. Anderson, PhD, MPH, MS

Member, 2015 Dietary Guidelines Advisory Committee

Professor, University of California San Diego

Disclosures

AFFILIATION/FINANCIAL INTERESTS (prior 12 months)	ENTITIES
Grants/Research Support	None
Scientific Advisory Board/Consultant/Board of Directors	None
Speakers Bureau	None
Stock Shareholder	None
Employee	University of California San Diego
Other	None

Learning Objectives

At the end of this program, attendees will be able to:

- Describe how the DGAC grades the available scientific evidence and identifies the paucity of data
- Detail topics requiring additional research or data
- Discuss methodological limitations and how they can be utilized to improve research design and methods
- Understand how to leverage the DGAC's recommendations to inform their organization's or laboratory's research priorities

CPE Credit

- ASN designates this educational activity for a maximum of 1 CPEUs. Dietitians and Dietetic Technicians, Registered should only claim credit commensurate with the extent of their participation in the activity.

- To claim credit, please take the post webinar evaluation provided after the webinar.

Asking Questions

- Please use the “questions” box on your “Go To Meetings” screen to submit questions to our presenters.

- Please submit your questions at any time during today’s webinar.

Grading the Evidence & Identifying Data Gaps

Emily Callahan, MS

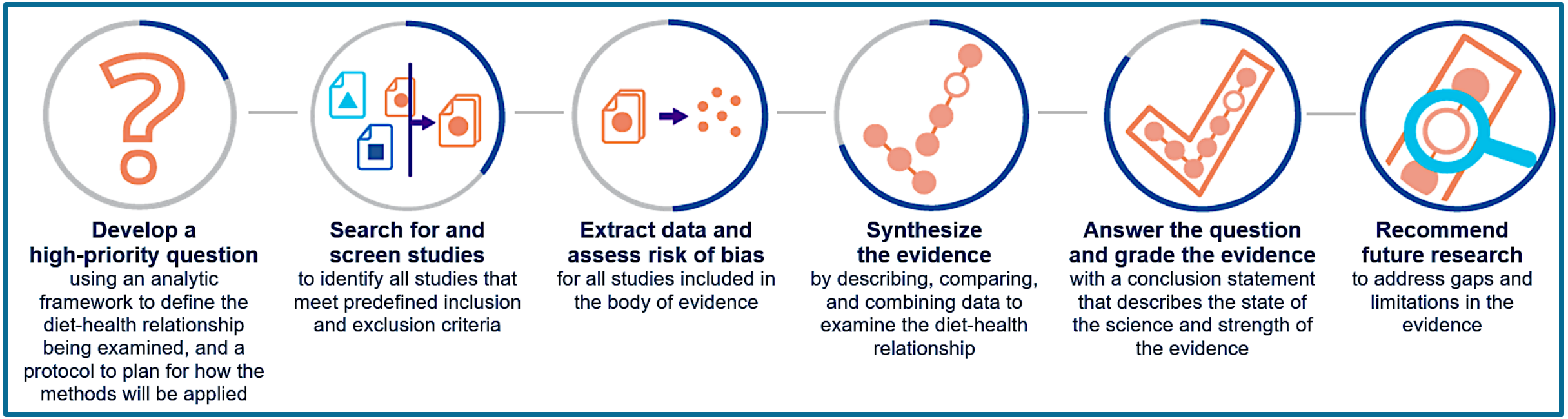
Disclosures

AFFILIATION/FINANCIAL INTERESTS (prior 12 months)	ENTITIES
Grants/Research Support	None
Scientific Advisory Board/Consultant/Board of Directors	None
Speakers Bureau	None
Stock Shareholder	None
Employee	U.S. Department of Agriculture
Other	None

NESR Systematic Review Methodology

NESR Systematic Review
Research project that answers a question on diet and health by searching for, evaluating, and synthesizing all relevant, peer-reviewed studies.

For more information on NESR methodology visit: https://nesr.usda.gov/



Conclusion Statements

- A conclusion statement is a summary statement that reflects the body of evidence reviewed and is written as the answer to the systematic review question.
- A conclusion statement may also state that there is not enough evidence to answer the question.

Grading the Strength of the Evidence

The Committee used predetermined criteria to assign one of four grades to indicate the **strength of the body of evidence supporting a specific conclusion statement**:

- Strong
- Moderate
- Limited
- Grade not assignable

NESR Criteria: Grading the Strength of the Evidence

Risk of Bias

likelihood that systematic errors resulting from the design and conduct of the studies could have impacted the accuracy of the reported results

Because risk of bias is assessed by study design, this grading element also allows for consideration of study design in the process of grading (i.e., randomized controlled trials, non-randomized controlled trials, and observational studies)

Consistency

degree of similarity in the direction and magnitude of effect, and whether any inconsistency can be explained by differences in study designs and methods

Directness

how well the primary research studies are designed to address the systematic review question

Precision

degree of certainty around an effect estimate for a given outcome, including sample size, number of studies, and variability within and across studies

Generalizability

whether the study participants, interventions and/or exposures, comparators, and outcomes examined are applicable to the U.S. population

** Study design is also considered by examining these elements for each category of study design separately (e.g., randomized controlled trials, non-randomized controlled trials, and observational studies).*

NESR Grades

***Strong*:**

The conclusion statement is based on a strong body of evidence as assessed by risk of bias, consistency, directness, precision, and generalizability. The level of certainty in the conclusion is strong, such that if new evidence emerges, modifications to the conclusion are unlikely to be required.

***Moderate*:**

The conclusion statement is based on a moderate body of evidence as assessed by risk of bias, consistency, directness, precision, and generalizability. The level of certainty in the conclusion is moderate, such that if new evidence emerges, modifications to the conclusion may be required.

***Limited*:**

The conclusion statement is based on a limited body of evidence as assessed by risk of bias, consistency, directness, precision, and generalizability. The level of certainty in the conclusion is limited, such that if new evidence emerges, modifications to the conclusion are likely to be required.

***Grade not assignable*:**

A conclusion statement cannot be drawn due to either a lack of evidence, or evidence that has severe limitations related to risk of bias, consistency, directness, precision, and/or generalizability.

Grade Not Assignable: Insufficient evidence and no evidence

Question	Conclusion Statement	Grade
What is the relationship between the frequency of eating and **all-cause mortality**?	**No evidence** is available to determine the relationship between the frequency of eating and all-cause mortality.	**Grade not assignable**
What is the relationship between frequency of eating and **growth, size, body composition, and risk of overweight and obesity**?	**Insufficient evidence** is available to determine the relationship between the frequency of eating and growth, size, and risk of overweight and obesity	**Grade not assignable**

Limited

Question	Conclusion Statement	Grade
What is the relationship between **seafood consumption** during pregnancy and lactation and **neurocognitive development** in the child?	**Limited** evidence suggests that seafood intake during pregnancy may be associated favorably with measures of **language and communication** development in the child.	**Limited**

Moderate

Question	Conclusion Statement	Grade
What is the relationship between **seafood consumption** during pregnancy and lactation and **neurocognitive development** in the child?	**Moderate** evidence indicates that seafood intake during pregnancy is associated favorably with measures of **cognitive development** in young children.	**Moderate**

Strong

Question	Conclusion Statement	Grade
What is the relationship between types of **fat** consumed and risk of **cardiovascular disease**?	**Strong and consistent evidence from randomized controlled trials demonstrates that replacing saturated fatty acids with unsaturated fats, especially polyunsaturated fatty acids, in adults significantly reduces total and low-density lipoprotein cholesterol.** Replacing saturated fatty acids with carbohydrates (sources not defined) also reduces total and low-density lipoprotein cholesterol, but significantly increases triglycerides and reduces high-density lipoprotein cholesterol. Since the 2015 Dietary Guidelines Advisory Committee review, evidence remains inadequate to differentiate among sources of carbohydrate and their impact on blood lipids.	**Strong**

Research Recommendations: Identifying Gaps

- Research recommendations are identified at every step of the systematic review process to address gaps and limitations in the evidence.
- These recommendations serve to highlight research needs as well as identify areas that will help to answer related systematic review questions in the future.

NESR Systematic Reviews

The systematic reviews along with detailed methodology for the 2020 Dietary Guidelines Advisory Committee are available at: https://nesr.usda.gov/2020-dietary-guidelines-advisory-committee-systematic-reviews

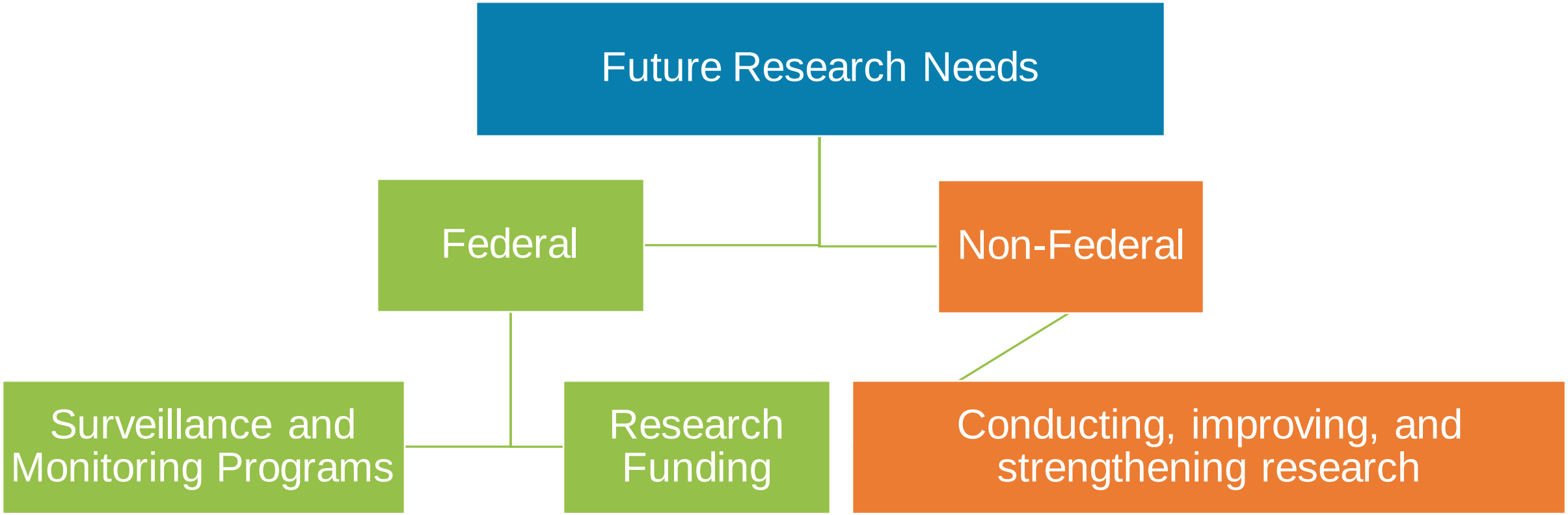
Tune into the last webinar in this series which will detail the NESR approach and provide recommendations for utilizing the NESR methodology as a guide when designing and publishing research: Wednesday, March 10th from 1 – 2 PM EST

How Future Research Needs Were Identified & How This Research May Inform Future Dietary Guidelines

Regan Bailey, PhD, MPH, RD, CPH

Disclosures

AFFILIATION/FINANCIAL INTERESTS (prior 12 months)	ENTITIES
Grants/Research Support	NIH; USAID; Indiana CTSI
Scientific Advisory Board/Consultant/Board of Directors	International Food Information Council
Speakers Bureau	None
Stock Shareholder	None
Employee	Purdue University
Other	When people traveled, I received travel expenses to attend scientific conferences and present my research


Future Research Needs
Federal
Non-Federal
Surveillance and Monitoring Programs
Research Funding
Conducting, improving, and strengthening research

Research and Other Funding Needs

- Coordination of research funding to address the questions posed to the DGAC will require considerable coordination at the Federal level
  - Funding priorities aligned across many agencies

Research and Other Funding Needs

- Coordination of research funding to address the questions posed to the DGAC will require considerable coordination at the Federal level
  - Funding priorities aligned across many agencies
- Funding and coordination of updates to the Dietary Reference Intakes, especially in certain life stages

Research and Other Funding Needs

- Coordination of research funding to address the questions posed to the DGAC will require considerable coordination at the Federal level
  - Funding priorities aligned across many agencies
- Funding and coordination of updates to the Dietary Reference Intakes, especially in certain life stages
- Updates to databases to reflect diversity of the American diet, cultural foods, more comprehensive for human milk

Research and Other Funding Needs

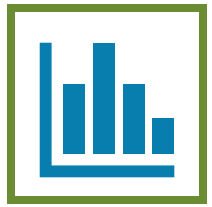
- Coordination of research funding to address the questions posed to the DGAC will require considerable coordination at the Federal level
  - Funding priorities aligned across many agencies
- Funding and coordination of updates to the Dietary Reference Intakes, especially in certain life stages
- Updates to databases to reflect diversity of the American diet, cultural foods, more comprehensive for human milk
- Tools and technologies

Research and Other Funding Needs

- Coordination of research funding to address the questions posed to the DGAC will require considerable coordination at the Federal level
  - Funding priorities aligned across many agencies
- Funding and coordination of updates to the Dietary Reference Intakes, especially in certain life stages
- Updates to databases to reflect diversity of the American diet, cultural foods, more comprehensive for human milk
- Tools and technologies
- Federal programs that provide food or influence behaviors

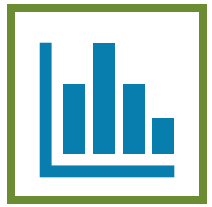
Needs and Gaps: Data Analysis

- Standardize definitions of life stages at the Federal level



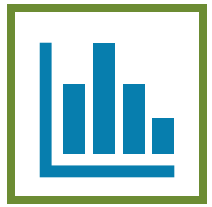
Needs and Gaps: Data Analysis

- Standardize definitions of life stages at the Federal level
- Develop HEI for those less than 2 years



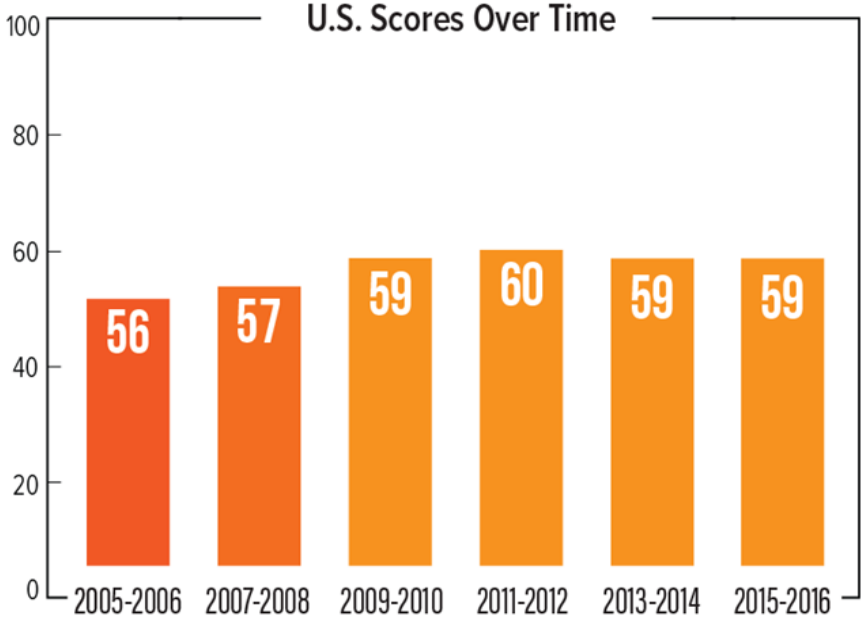
Needs and Gaps: Data Analysis

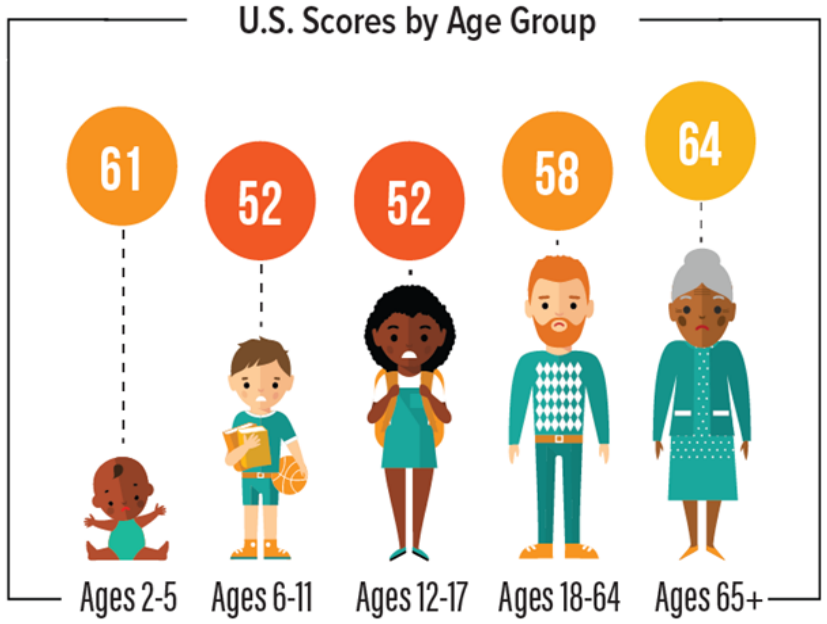
- Standardize definitions of life stages at the Federal level
- Develop HEI for those less than 2 years
- External ways to examine diet quality independent of HEI



Needs and Gaps: Data Analysis

- Standardize definitions of life stages at the Federal level
- Develop HEI for those less than 2 years
- External ways to examine diet quality independent of HEI
- Identify what dietary patterns exist

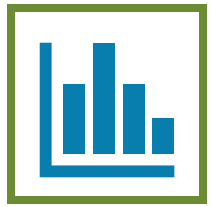




Data source for Healthy Eating Index scores: What We Eat in American, National Health and Nutrition Examination Survey. (Undated data are from 2015-2016).

Needs and Gaps: Data Analysis

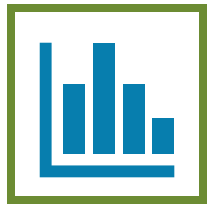
- Standardize definitions of life stages at the Federal level
- Develop HEI for those less than 2 years
- External ways to examine diet quality independent of HEI
- Identify what dietary patterns exist
- Additional data on beverage patterns are needed



Needs and Gaps: Data Analysis

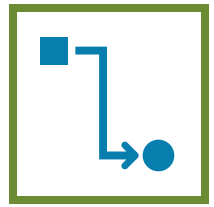
- Standardize definitions of life stages at the Federal level
- Develop HEI for those less than 2 years
- External ways to examine diet quality independent of HEI
- Identify what dietary patterns exist
- Additional data on beverage patterns are needed
- Over sampling populations where little data are available, especially for dietary intakes and nutritional biomarkers

  (i.e. infants and toddlers, reproductive-aged females, pregnant and lactating women, certain race and ethnic groups, food security statues).



Needs and Gaps

A process is needed to identify topics that can be carried forward into a future cycle of the DGA without additional review by the advisory committee.



Research Needs: General

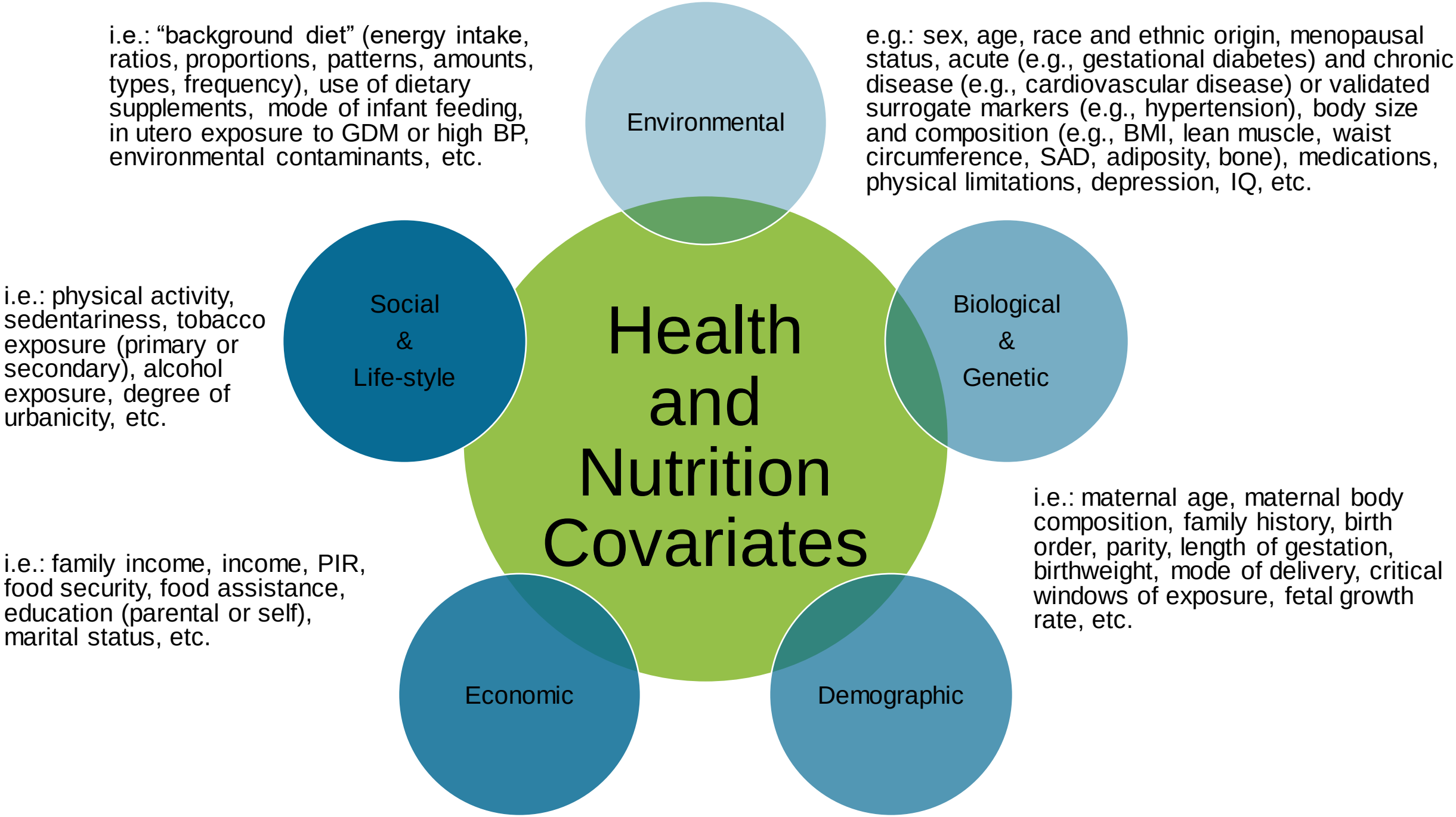
- Dietary assessment is a critical need across all sectors
  - Multiple measurements needed for cross-sectional and cohort studies

Research Needs: General

- Dietary assessment is a critical need across all sectors
  - Multiple measurements needed for cross-sectional and cohort studies
- Standardization of terms and tools (by consensus panels?)
  - Understanding complexity of the diet

Research Needs: General

- Dietary assessment is a critical need across all sectors
  - Multiple measurements needed for cross-sectional and cohort studies
- Standardization of terms and tools
  - Understanding complexity of the diet
- Look at the lists of covariates in the existing NESR frameworks, much additional information should be collected on the population being studies


i.e.: “background diet” (energy intake, ratios, proportions, patterns, amounts, types, frequency), use of dietary supplements, mode of infant feeding, in utero exposure to GDM or high BP, environmental contaminants, etc.
Environmental
e.g.: sex, age, race and ethnic origin, menopausal status, acute (e.g., gestational diabetes) and chronic disease (e.g., cardiovascular disease) or validated surrogate markers (e.g., hypertension), body size and composition (e.g., BMI, lean muscle, waist circumference, SAD, adiposity, bone), medications, physical limitations, depression, IQ, etc.
i.e.: physical activity, sedentariness, tobacco exposure (primary or secondary), alcohol exposure, degree of urbanicity, etc.
Social & Life-style
Health and Nutrition Covariates
Biological & Genetic
i.e.: maternal age, maternal body composition, family history, birth order, parity, length of gestation, birthweight, mode of delivery, critical windows of exposure, fetal growth rate, etc.
i.e.: family income, income, PIR, food security, food assistance, education (parental or self), marital status, etc.
Economic
Demographic

Research Need: General

- Dietary assessment is a critical need across all sectors
  - Multiple measurements needed for cross-sectional and cohort studies
- Standardization of terms and tools
- Look at the lists of covariates in the existing NESR frameworks, much additional information should be collected on the population being studies
- Systems-based approaches to examine multi-level social ecological determinants of dietary exposures

Research Need: General

- Dietary assessment is a critical need across all sectors
  - Multiple measurements needed for cross-sectional and cohort studies
- Standardization of terms and tools
- Look at the lists of covariates in the existing NESR frameworks, much additional information should be collected on the population being studies
- Systems-based approaches to examine multi-level social ecological determinants of dietary exposures
- All the -omes and -omics

Research Need: General

- Dietary assessment is a critical need across all sectors
  - Multiple measurements needed for cross-sectional and cohort studies
- Standardization of terms and tools
- Look at the lists of covariates in the existing NESR frameworks, much additional information should be collected on the population being studies
- Systems-based approaches to examine multi-level social ecological determinants of dietary exposures
- All the -omes and -omics
- Immune function

How To Leverage DGAC Recommendations to Inform Research Priorities

Alice H. Lichtenstein, D.Sc.

Disclosures

AFFILIATION/FINANCIAL INTERESTS (prior 12 months)	ENTITIES
Grants/Research Support	NIH, USDA, Hass Avocado Board
Scientific Advisory Board/Consultant/Board of Directors	None
Speakers Bureau	None
Stock Shareholder	None
Employee	Tufts University
Other	None

DGAC Recommendations – 2000 vs. 2020

Dietary Guidelines Advisory Committee

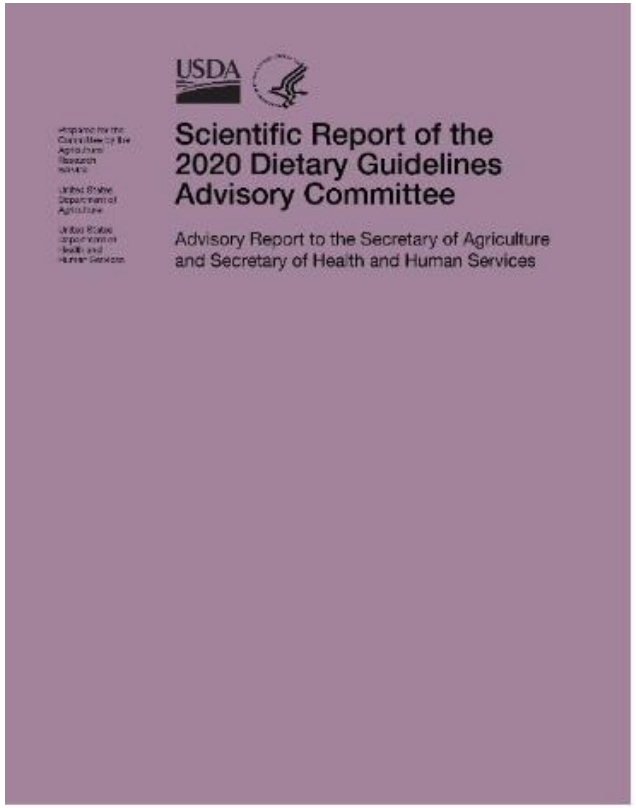
Prepared for the Committee by the Agricultural Research Service

United States Department of Agriculture

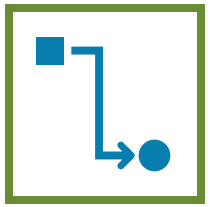
Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 2000

To the Secretary of Health and Human Services and the Secretary of Agriculture

Table of Contents



2000 DGAC Report – Recommendations



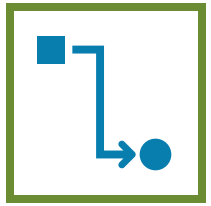
Improving the Review Process

Filling Information Gaps

- Diet and Health Outcomes
- Monitoring
- Design of Educational Tools

https://www.dietaryguidelines.gov/sites/default/files/2019-05/Full%20DGAC%20Report.pdf

2000 DGAC Report – Recommendations

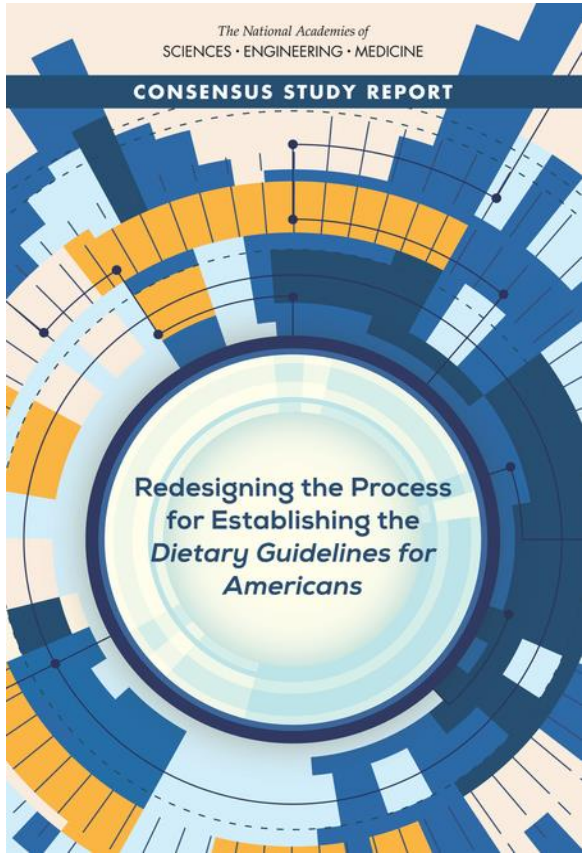


Improving the Review Process

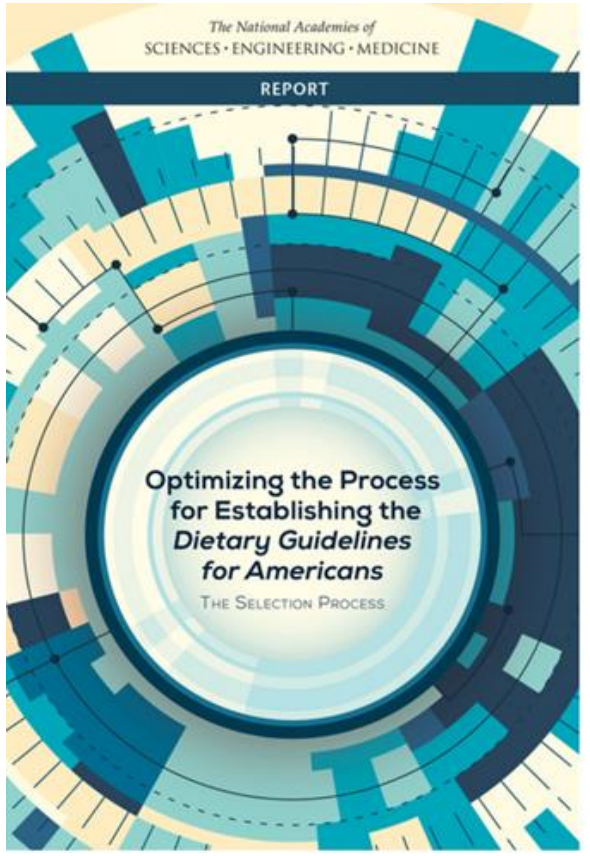
Provide more information about specific users and uses of the *Dietary Guidelines* to help inform future DGAC about ***how best to approach the development of specific guidelines***

https://www.dietaryguidelines.gov/sites/default/files/2019-05/Full%20DGAC%20Report.pdf

DGAC Report - Improving the Review Process

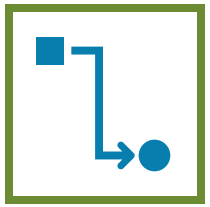


https://www.nap.edu/download/24883
Sept 2017



https://www.nap.edu/download/24637
Sept 2017

2000 DGAC Report – Recommendations

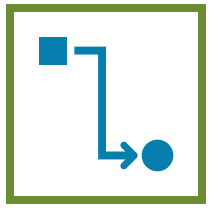


Improving the Review Process

Improve definition of the ***interrelationship between the Food Guide Pyramid and Dietary Guidelines***

https://www.dietaryguidelines.gov/sites/default/files/2019-05/Full%20DGAC%20Report.pdf

2020 DGAC Report – Future Directions



Support for Activities Related to the *Dietary Guidelines*

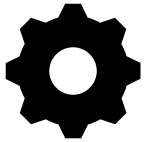
Identify ***collaborative efforts across the Federal government …***

2000 DGAC Report – Recommendations

Filling Information Gaps

- Diet and Health Outcomes

- Monitoring



- Design of Educational Tools

https://www.dietaryguidelines.gov/sites/default/files/2019-05/Full%20DGAC%20Report.pdf

2000 DGAC Report – Recommendations

Diet and Health Outcomes

- … evaluate ***short- and long-term benefits*** of adherence to the *Dietary Guidelines*, …
- Improve our understanding of ***overweight and obesity***, …, and risks and benefits of their treatment.
- Conduct population studies to assess health outcomes related to the intake of different levels, types, and sources of ***dietary carbohydrates***.

https://www.dietaryguidelines.gov/sites/default/files/2019-05/Full%20DGAC%20Report.pdf

2000 DGAC Report – Recommendations

Diet and Health Outcomes

- Determine the optimal ***ratios between fat and carbohydrate*** for the American diet.
- Determine the optimal ***fatty acid composition*** of the diet.
- Evaluate the role of the *Dietary Guideli*nes in promoting improved ***calcium*** status among at-risk populations.

https://www.dietaryguidelines.gov/sites/default/files/2019-05/Full%20DGAC%20Report.pdf

2000 DGAC Report – Recommendations

Diet and Health Outcomes

- Explore potential mechanisms that account for the decreased risks of chronic or degenerative diseases that are attributable to ***whole grain and fruit and vegetable*** …
- Conduct studies on the appropriateness of population-wide recommendations related to ***sodium*** intake.
- Improve our understanding of the risks and benefits of moderate levels of ***alcohol*** consumption in relevant age groups.

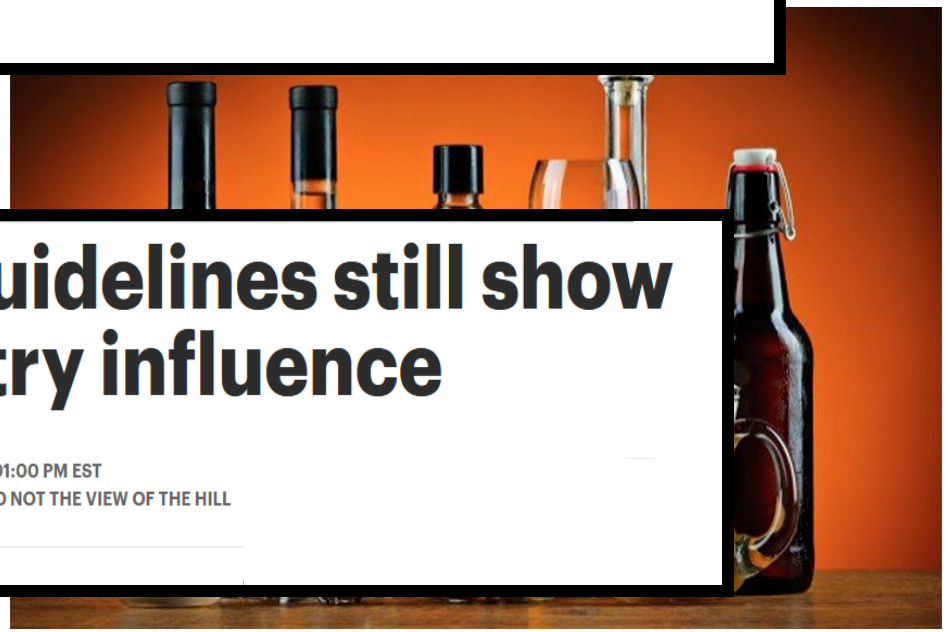
https://www.dietaryguidelines.gov/sites/default/files/2019-05/Full%20DGAC%20Report.pdf

2020 DGAC Report

The New York Times

U.S. Diet Guidelines Sidestep Scientific Advice to Cut Sugar and Alcohol

December 29, 2020



THE HILL

New dietary guidelines still show signs of industry influence

BY THOMAS GREMILLION, OPINION CONTRIBUTOR — 01/23/21 01:00 PM EST
THE VIEWS EXPRESSED BY CONTRIBUTORS ARE THEIR OWN AND NOT THE VIEW OF THE HILL

Images from Google search

2020 DGAC Report – Future Directions

- … integrate systems science approaches, including consideration of dietary patterns, in treating and managing ***diet-related conditions and disorders, such as type 2 diabetes, obesity, and cardiovascular disease (CVD).***

https://www.dietaryguidelines.gov/2020-advisory-committee-report

2000 DGAC Report – Recommendations

Monitoring

- Continue to ***monitor dietary intakes*** and health outcomes.

https://www.dietaryguidelines.gov/sites/default/files/2019-05/Full%20DGAC%20Report.pdf

2020 DGAC Report – Future Directions

Support for Federal Data – National Health and Nutrition Examination Survey (NHANES), What We Eat in America (WWEIA)

- Expand diversity and sample size of underreported populations
- Include biomarker data
- Improve dietary assessment methods that can more accurately estimate energy intakes

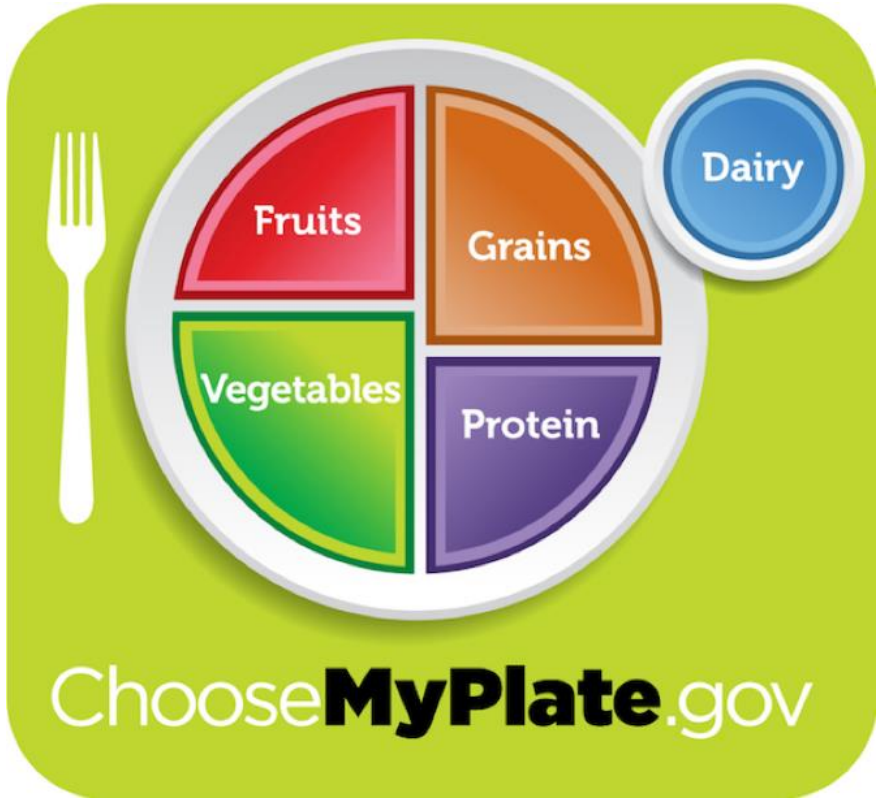
2000 DGAC Report – Recommendations

Design of Educational Tools

- Take steps to harmonize the information on the Nutrition Facts Label with the Food Guide Pyramid, …

https://www.dietaryguidelines.gov/sites/default/files/2019-05/Full%20DGAC%20Report.pdf

2000 DGAC Report – Recommendations



Nutrition Facts

8 servings per container

Serving size **2/3 cup (55g)**

Amount per serving

Calories **230**

	% Daily Value*
Total Fat 8g	**10%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**13%**
Dietary Fiber 4g	**14%**
Total Sugars 12g	
Includes 10g Added Sugars	**20%**
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 240mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

2000 DGAC Report – Recommendations

Design of Educational Tools

- Conduct intervention studies to guide the development of strategies, educational tools, and programs ***designed to help change dietary patterns at the individual and population levels***.

https://www.dietaryguidelines.gov/sites/default/files/2019-05/Full%20DGAC%20Report.pdf

2020 DGAC Report – Future Directions

Develop tools and technologies to help individuals manage weight and analyze and plan their diets.

https://www.dietaryguidelines.gov/2020-advisory-committee-report

2020 DGAC Report – Additional Issues

- Updates to existing DRIs are urgently needed.
- Support efforts to consider the *Dietary Guidelines* in relation to sustainability of the food system.
- Address numerous gaps related to infants and children.

2025 DGAC

Images from Google search

Discussion

Join Us!

Webinar 3: Designing, Implementing and Presenting Research to be Reviewed by the 2020 Dietary Guidelines Advisory Committee

Wednesday, March 10th 1-2 PM EST

Special Thanks To

This webinar series is brought to you by the ASN Foundation. Your donation to the ASN Foundation helps advance the science, education, and practice of nutrition.