Challenges and Opportunities for Dietary Patterns in Cancer Research

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I have no conflicts of interest to disclose
World Cancer Research Fund/American Institute of Cancer Research Recommendations

- Be a healthy weight
- Be physically active
- Eat a diet rich in wholegrains, vegetables, fruits and beans
- Limit ‘fast foods’, and other processed foods high in fat, starches or sugars
- Limit consumption of red and processed meat
- Limit consumption of sugar-sweetened drinks
- Limit alcohol consumption
- Do not use supplements for cancer prevention
- For mothers: breastfeed your baby, if you can
- After a cancer diagnosis: follow our Recommendations, if your can
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It is believed overall “diet” including energy balance might account for 20-30% of total cancers.

Of the established dietary factors, about 4-5% of the total cancers are preventable by optimizing intake independently of energy balance (Colorectal cancers largely account for this effect) Ref: Zhang FF, JNCI Cancer Spectrum, 2019

Are we missing a substantial proportion of the dietary effect by examining individual items?
The individual Recommendations form a package that, taken together, direct people towards healthy patterns of diet and physical activity. People do not eat foods in isolation but in combination, forming an overall diet. Different components of the diet interact with one another, so the impact of one factor may be influenced by another. We are confident that following all the Recommendations offers more protection than following just one.

From AICR/WCRF recommendations
Rationale to study dietary patterns in cancer research:

The whole diet would better pick up additive and “synergistic” effects (e.g., many small effects may add up to a substantial one)

Inherently accounts for substitution (i.e., what one eats and does not eat)

Easier to translate & communicate (people eat foods)
Three main approaches to dietary patterns:

Indices or scores based on prior knowledge (A priori)

Empirically derived from dietary data of the study population (e.g., principal components analysis)

Hypothesis oriented (e.g., insulinemia, inflammation)
Three main approaches to dietary patterns:

Indices or scores based on prior knowledge (A priori)

Empirically derived from dietary data of the study population (e.g., principal components analysis)

Hypothesis oriented (e.g., insulinemia, inflammation)
<table>
<thead>
<tr>
<th>Index components</th>
<th>HEI-2010</th>
<th>AHEI-2010</th>
<th>DASH</th>
<th>Typical MED</th>
<th>WCRF/AICR</th>
<th>Rec. Food Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher intake rewarded</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruits</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Vegetables</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Nuts or legumes</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Whole grains</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Low-fat dairy products</td>
<td>+</td>
<td></td>
<td>+</td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Fish and other seafood</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Lower/no intake rewarded</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Red or processed meat</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sugared beverages</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Alcoholic beverages</td>
<td>+</td>
<td>m</td>
<td>m</td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Table salt</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td>+</td>
</tr>
</tbody>
</table>

Summary of index components that are common across most of the dietary indices

Tabung 2017 Curr Colorectal Cancer Rep
Dietary indices/scores based on prior knowledge

• There is a lot of overlap among dietary patterns
• They vary how they treat certain items like alcohol, salt, dairy, animal proteins other than red meat
• Their correlations are around 0.6 to 0.7.
• Most are focused on CVD risk reduction (e.g., lipids, sugars, blood pressure: DASH, Healthy Eating Index, Mediterranean)
• Any association with cancer would be a secondary benefit
Figure 1. Number of deaths due to heart disease and cancer: United States, 1950–2014
# Food groups and intermediate disease markers: a systematic review and network meta-analysis of randomized trials

<table>
<thead>
<tr>
<th>Summary</th>
<th>LDL-C</th>
<th>TGs</th>
<th>HOMA-IR</th>
<th>CRP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuts</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Whole grains</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Legumes</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>2</td>
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<tr>
<td>Fish</td>
<td>4</td>
<td>9</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Fruits/vegetables</td>
<td>5</td>
<td>4</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Refined grains</td>
<td>6</td>
<td>5</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Red meat</td>
<td>7</td>
<td>10</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Eggs</td>
<td>8</td>
<td>6</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Dairy</td>
<td>9</td>
<td>7</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Sugar Beverages</td>
<td>10</td>
<td>8</td>
<td>9</td>
<td>-</td>
</tr>
</tbody>
</table>

Schwingshackl et al AJCN 2018
Meta Analysis of Fruits & Vegetables

% Risk Reduction per 200g/day

- CHD
- Stroke
- CVD
- Cancer

D Aune IJE 2017
The magnitude of the protective association between total fruits and vegetables is 3 times stronger for CHD and 5 times stronger for stroke than it is for total cancer risk.
Three main approaches to dietary patterns:

Indices or scores based on prior knowledge (A priori)

Empirically derived from dietary data of the study population (e.g., principal components analysis)

Hypothesis oriented (e.g., insulinemia, inflammation)
### Summary of major food groups common in most Principal Components Analysis (PCA)-derived dietary patterns across the world

<table>
<thead>
<tr>
<th>Food components in dietary patterns derived using PCA</th>
<th>United States</th>
<th>Canada</th>
<th>Argentina</th>
<th>Uruguay</th>
<th>European countries</th>
<th>Sweden</th>
<th>South Korea</th>
<th>Japan</th>
<th>Jordan</th>
<th>Iran</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>“Healthy” dietary pattern</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruits</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Vegetables</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Nuts and legumes</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Whole grains</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Milk dairy &amp; other dairy</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Fish and poultry</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td><strong>“Unhealthy” dietary pattern</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Red and processed meat</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sugar-sweetened beverages</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Refined grains and desserts</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Potatoes</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>
There is reasonable concordance in derived dietary patterns across diverse countries (though broader studies are required). In most populations, an “unhealthy” (western) and “healthy” dietary patterns emerges in the first two components.

Differences could represent real differences in dietary factors (e.g., some items such as sugar sweetened beverages can be consumed variably across countries), differences in the questionnaires, grouping of food items, statistical methodology, etc.
Correlations among dietary patterns in the Nurses’ Health Study

<table>
<thead>
<tr>
<th></th>
<th>Prudent</th>
<th>Western</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHEI</td>
<td>.51</td>
<td>-.55</td>
</tr>
<tr>
<td>Mediterranean</td>
<td>.80</td>
<td>-.12</td>
</tr>
<tr>
<td>DASH</td>
<td>.75</td>
<td>-.44</td>
</tr>
</tbody>
</table>

Index based: Alternative health eating index (aHEI)
Alternative Mediterranean (aMed)
DASH

Empirical: Western
Prudent
Three main approaches to dietary patterns:

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Hypothesis oriented (e.g., insulinemia, inflammation)
Diet/Lifestyle

↓ Fruits, vegetables, whole grains, low-fat dairy, salt
↑ Potassium/Sodium ratio

↓ Nuts, oil, fish
↓ Polyunsaturated/saturated fat ratio

↑ Dietary patterns that increase insulin secretion and inflammation

Mediator

↑ Blood Pressure

↓ LDL cholesterol
↓ HDL cholesterol

Cardiovascular Disease

↑ LDL cholesterol
↑ Triglycerides
↓ HDL cholesterol

Cardiovascular Disease

↑ Insulin
↑ Glucose
↑ Inflammation

Cardiovascular Disease

Diabetes Mellitus
Cancers (obesity related)

Disease
Empirically determined foods that predict hyperinsulinemia and systemic inflammation (NHS, NHS2, HPFS, WHI)

Dietary prediction models of biomarkers:
- C-peptide (insulin secretion)
- inflammation (CRP, IL-6, TNF-alphaR2)

Foods and food groups entered the regression models in an unbiased manner

Many common items predicted the 2 biomarkers (18 individual items overall for each biomarker)
<table>
<thead>
<tr>
<th>Food</th>
<th>Pro-Insulinemic</th>
<th>Pro-Inflammatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Meat</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Processed Meat</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Starchy Vegetables</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Refined vs Whole Grains</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sugar-Sweetened Beverages</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Coffee</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Alcohol (moderate)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Vegetables (Non-Starchy; green)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fruit / Fruit Juice</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Low-fat dairy</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Butter</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Eggs</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Poultry, non-fatty fish</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

Relevant publications:

F Tabung et al Br J Nutr 2016
F Tabung et al J Nutrition 2017
F Tabung et al J Nutr 2018
Does the empirical hyperinsulinemia (EDIH) really tell us anything differently than other dietary patterns?
Correlations among dietary patterns in the Nurses’ Health Study

**Index based:** Alternative health eating index (aHEI)  
Alternative Mediterranean (aMed)  
DASH

**Empirical:**  
Prudent  
Western

**Hypothesis:** Insulinemic (EDIH)  
Inflammatory (EDIP)

<table>
<thead>
<tr>
<th></th>
<th>EDIP</th>
<th>EDIH</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHEI</td>
<td>-.22</td>
<td>-.42</td>
</tr>
<tr>
<td>aMED</td>
<td>-.09</td>
<td>-.05</td>
</tr>
<tr>
<td>DASH</td>
<td>-.21</td>
<td>-.30</td>
</tr>
<tr>
<td>Prudent</td>
<td>-.03</td>
<td>.02</td>
</tr>
<tr>
<td>Western</td>
<td>.24</td>
<td>.63</td>
</tr>
</tbody>
</table>
Dietary Patterns and Colon Cancer in the Nurses’ Health Study

Tabung JAMA Oncol 2018; Tabung AJCN 2018; Petimar AJCN 2018

<table>
<thead>
<tr>
<th>Diet Pattern</th>
<th>RR (95%) Colon Cancer High vs low</th>
<th>P, trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mediterranean Dietary Pattern</td>
<td>1.02 (0.83–1.25)</td>
<td>NS</td>
</tr>
<tr>
<td>Alternative Healthy Diet</td>
<td>1.03 (0.85–1.26)</td>
<td>NS</td>
</tr>
<tr>
<td>DASH</td>
<td>1.02 (0.84–1.24)</td>
<td>NS</td>
</tr>
<tr>
<td>Insulinemic Diet Pattern</td>
<td>1.32 (1.09–1.60)</td>
<td>.003</td>
</tr>
<tr>
<td>Inflammatory Diet Pattern</td>
<td>1.33 (1.09–1.55)</td>
<td>.001</td>
</tr>
</tbody>
</table>
A large part of the dietary effect on cancer is in helping to avoid weight gain and to maintain normal body weight over the life course.

Therefore, it will be important to examine dietary patterns in relation to weight gain – could turn out to be the most important aspect of diet in relation to cancer.
Dietary Pattern

Physical Inactivity

(Visceral) Adiposity

↑ Insulin/IGF

↑ Systemic Inflammation

Cancer Risk
Knowledge-based Indices

Empirical-based Patterns

Commonality/Shared Attributes

Cancers
Other Chronic Diseases

Hypothesis-oriented
Tentative approach to judging the evidence for dietary patterns for AICR/WCRF

Evidence for each type of dietary and lifestyle pattern can be evaluated separately.

Meta-analysis is the preferred method for summarizing the data but most may not be meta-analyzed, requiring a narrative synthesis with “synthetic summary” - identify the key findings or trends, potential reasons for observed variations, and strengths and limitations of the body of evidence.

The commonality of the data should be considered by taking into account the shared attributes among the diverse patterns that are consistently related to the risk of certain cancers.
Thank you!
Today

• Background on the process and evidence-base used to develop the Dietary Guidelines

• Overview of the Dietary Guidelines for Americans, 2020-2025

Julie Obbagy, PhD, RD
Julie.Obbagy@usda.gov
USDA, Center for Nutrition Policy and Promotion
AICR Lifestyle and Cancer Symposium | January 28, 2021
About the Dietary Guidelines

• The Dietary Guidelines for Americans serves as the cornerstone of federal nutrition programs and policies.
• It provides food-based recommendations to help prevent diet-related chronic diseases and promote overall health – now for all ages!
• Mandated to reflect the preponderance of scientific evidence, and published jointly by USDA and HHS every five years.
• Targeted to professionals who work with the general public to help them consume a healthy and nutritionally adequate diet and establish policies and services to support these efforts.

2020 Dietary Guidelines Advisory Committee

• Examined the evidence on specific topics and scientific questions identified by the Departments of Agriculture and Health and Human Services
• Developed and submitted a report to the Departments that outlined its science-based review and recommendations
From Evidence to Advice

Data Analysis
Analyses that use national data sets to help us understand the current health and dietary intakes of Americans. These data help make our advice practical, relevant, and achievable. The Committee conducted more than 150 analyses of Federal data sets.

Food Pattern Modeling
Analysis that helps us understand how changes to the amounts or types of foods and beverages in a pattern impact meeting nutrient needs across the U.S. population. Several food pattern modeling analyses were completed, and representing for the first time, the 6-24 month life stage.

NESR Systematic Review
Research project that answers a question on diet and health by searching for, evaluating, and synthesizing all relevant, peer-reviewed studies. More than 270,000 citations were screened and nearly 1,500 original research articles included in 33 original systematic reviews.

NESR Systematic Reviews: Dietary Patterns

Dietary patterns: the quantities, proportions, variety, or combination of different foods, drinks, and nutrients (when available) in diets, and the frequency with which they are habitually consumed including, at a minimum, a description of the foods and beverages in the pattern.
**Process to Develop the *Dietary Guidelines***

- Federal writing team of nutrition scientists draft the *Dietary Guidelines* based on the preponderance of evidence:
  - 2015-2020 Dietary Guidelines
  - Scientific Report
  - Agency and public comments

- The draft *Dietary Guidelines* go through several rounds of review and revision:
  - Federal expert review
  - External peer review
  - Departmental clearance, including review by all Agencies with nutrition policies and programs across USDA and HHS, such as NIH, FDA, CDC, FNS, and FSIS

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**The Guidelines**

1. Follow a healthy dietary pattern at every life stage.
2. Customize and enjoy nutrient-dense food and beverage choices to reflect personal preferences, cultural traditions, and budgetary considerations.
3. Limit foods and beverages higher in added sugars, saturated fat, and sodium, and limit alcoholic beverages.
4. Focus on meeting food group needs with nutrient-dense foods and beverages, and stay within calorie limits.
1. Follow a healthy dietary pattern at every life stage.

- At every life stage—infancy, toddlerhood, childhood, adolescence, adulthood, pregnancy, lactation, and older adulthood—it is never too early or too late to eat healthfully.

- For about the first 6 months of life, exclusively feed infants human milk. Continue to feed infants human milk through at least the first year of life, and longer if desired. Feed infants iron-fortified infant formula during the first year of life when human milk is unavailable. Provide infants with supplemental vitamin D beginning soon after birth.

- At about 6 months, introduce infants to nutrient-dense complementary foods. Introduce infants to potentially allergenic foods along with other complementary foods. Encourage infants and toddlers to consume a variety of foods from all food groups. Include foods rich in iron and zinc, particularly for infants fed human milk.

- From 12 months through older adulthood, follow a healthy dietary pattern across the lifespan to meet nutrient needs, help achieve a healthy body weight, and reduce the risk of chronic disease.

2. Customize and enjoy nutrient-dense food and beverage choices to reflect personal preferences, cultural traditions, and budgetary considerations.

- A healthy dietary pattern can benefit all individuals regardless of age, race, or ethnicity, or current health status. The Dietary Guidelines provides a framework intended to be customized to individual needs and preferences, as well as the foodways of the diverse cultures in the United States.
3. Focus on meeting food group needs with nutrient-dense foods and beverages, and stay within calorie limits.

An underlying premise of the *Dietary Guidelines* is that nutritional needs should be met primarily from foods and beverages—specifically, nutrient-dense foods and beverages. Nutrient-dense foods provide vitamins, minerals, and other health-promoting components and have no or little added sugars, saturated fat, and sodium.

A healthy dietary pattern consists of nutrient-dense forms of foods and beverages across all food groups, in recommended amounts, and within calorie limits.

The core elements that make up a healthy dietary pattern include:

- **Vegetables of all types**—dark green; red and orange; beans, peas, and lentils; starchy; and other vegetables
- **Fruits**, especially whole fruit
- **Grains**, at least half of which are whole grain
- **Dairy**, including fat-free or low-fat milk, yogurt, and cheese, and/or lactose-free versions and fortified soy beverages and yogurt as alternatives
- **Protein foods**, including lean meats, poultry, and eggs; seafood; beans, peas, and lentils; and nuts, seeds, and soy products
- **Oils**, including vegetable oils and oils in food, such as seafood and nuts

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**The 85-15 Guide:**
**Percentage of Calories Needed To Meet Food Group Needs With Nutrient-Dense Choices and Percentage Left for Other Uses**

Most of the calories a person needs to eat each day—around 85 percent—are needed to meet food group recommendations healthfully, in nutrient-dense forms. The remaining calories—around 15 percent—are calories available for other uses, including for added sugars or saturated fat beyond the small amounts found in nutrient-dense forms of foods and beverages within the pattern, to consume more than the recommended amount of a food group, or for alcoholic beverages. This equates to 250 to 350 remaining calories for calorie patterns appropriate for most Americans.
4. Limit foods and beverages higher in added sugars, saturated fat, and sodium, and limit alcoholic beverages.

At every life stage, meeting food group recommendations—even with nutrient-dense choices—requires most of a person’s daily calorie needs and sodium limits. A healthy dietary pattern doesn’t have much room for extra added sugars, saturated fat, or sodium—or for alcoholic beverages. A small amount of added sugars, saturated fat, or sodium can be added to nutrient-dense foods and beverages to help meet food group recommendations, but foods and beverages high in these components should be limited.

Limits are:

- **Added sugars**—Less than 10 percent of calories per day starting at age 2. Avoid foods and beverages with added sugars for those younger than age 2.
- **Saturated fat**—Less than 10 percent of calories per day starting at age 2.
- **Sodium**—Less than 2,300 milligrams per day—and even less for children younger than age 14.
- **Alcoholic beverages**—Adults of legal drinking age can choose not to drink or to drink in moderation by limiting intake to 2 drinks or less in a day for men and 1 drink or less in a day for women, when alcohol is consumed. Drinking less is better for health than drinking more. There are some adults who should not drink alcohol, such as women who are pregnant.

**Chapters 2-6: Tailored Guidance Across Life Stages** (Infants & Toddlers, Children & Adolescents, Adults, Women Who Are Pregnant and Lactating, Older Adults)

Each chapter includes:

- Healthy U.S.-Style Dietary Pattern at relevant calorie levels
- Overview of current intakes compared to recommendations
- Special dietary considerations
- Resources to support healthy eating
Access the Dietary Guidelines for Americans

- Visit DietaryGuidelines.gov to access the new edition and online-only supporting materials, as well as details about the process to develop the Guidelines (i.e., the 2020 Committee’s Scientific Report)
  » Sign up to receive email updates about additional materials coming soon.
  » Visit NESR.usda.gov for the systematic reviews conducted to inform the Guidelines
- Visit MyPlate.gov to access resources to help Americans put these Guidelines into practice starting today.

For lifelong good health, make every bite count with the Dietary Guidelines for Americans

Acknowledgments


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Barbara Comerford, PhD; Robert Moussaian, MD; Judy An L; Melissa Bailey, PhD; MPH; RD; Lynda Bazarian, MD, PhD; Carol Brashler, PhD, MPH, RD; Teresa Davis, PhD; Kathryn Denver, PhD; Shannon Elmquist, PhD, RD; Steven Heaney, MD; MS; Heath Leep, PhD; Richard Mullins, PhD, MPH, RD; Elizabeth Torres-Gonzalez, PhD, RD; Timothy Young, MD, MPH; Rachel Nestor, PhD, RD, LD; Joan Satia, MD; EPH; Linda Steckel, PhD, EPH; EPH; Janine Tang, PhD, MPH, RD; Stull Tannen, MD, MPH; Linda Van Horn, PhD, RD, LD.

The Departments also acknowledge the work of the scientific, staff, and policy officials responsible for the production of this document.

Policy Officials
USDA: Secretary Sonny Perdue, DVM; Brandon Lipps, Family Miller; Jackie Hayes, MS, RD.
HHS: Secretary Alex M. Azar II, JO Brett F. Giroir, MD; Paul Reed, MD; Don Wright, MD, MPH (through March 2020).

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HHS: Janet de Jace, MS, RD; Richard Omen, MD, MPH; Claire Perine, PhD; Julie Quern, MS, PhD, RD; Karla Perry, PhD, RD; Jennifer Reiner, PhD, RD; Dana Deering, PhD, RD; Dana Anderson, MD, PhD; RD; Donna Andrews, PhD, MS, RD, LD.


Reviewers:
The Departments acknowledge the contributions of numerous other internal and external scientific and technical reviewers who provided constructive and rigorous reviews during the development of this document.

Finally, the Departments would like to acknowledge the important role of the Federal staff who supported the development of this edition of the Dietary Guidelines, and those who provided public comments throughout the process.
MAKING THE DIETARY GUIDELINES COUNT FOR CANCER PREVENTION AND SURVIVORSHIP

Melissa Maitin-Shepard, MPP • MMS Health Strategies, LLC
AICR Lifestyle and Cancer Symposium
January 28, 2021
Presentation Overview

1. AICR’s Engagement in the 2020-2025 Dietary Guidelines Development Process

2. Comparison of the 2020-2025 Dietary Guidelines for Americans with AICR’s 10 Cancer Prevention Recommendations

3. Why it Matters
Public Policy Goals for the Dietary Guidelines

- **Influence the DGA development process** to:
  - Address cancer
  - Align with AICR’s Cancer Prevention Recommendations
  - Inform programs, policy, and messaging to make it easier for people to make healthy dietary choices that reduce their cancer risk
  - Ensure AICR remains a respected and visible resource for government decision makers and the public
  - **Educate** about the DGA, consistency with AICR’s recommendations and strategies for implementation

Source: USDA and HHS
AICR’s Input in the 2020-2025 DGA Development Process

2020 Dietary Guidelines Advisory Committee Timeline*

- **2018**: February 28-March 30
  - Call for comments on the topics and supporting scientific questions

- **2019**: September 6-October 9
  - Call for nominations to the 2020 Dietary Guidelines Advisory Committee
  - Open public comment period during the Advisory Committee’s work

- **2020**: June
  - Written comment letter
  - Oral comments
  - Sign on letter with 30+ organizations
  - Meeting with USDA/HHS
  - Written comment letter
  - Oral comment letter
  - Sign on letter with 12 organizations
  - Op-ed
  - Meeting with USDA/HHS

*Source for Timeline: Presentation by Eve Stoody, USDA, DGAC Draft Report Meeting, July 2020*
AICR’S Recommendations to the DGAC

✓ Utilize existing high-quality systematic reviews and meta-analyses conducted by researchers and organizations outside of the federal government, such as AICR CUP reviews
  ✓ 30+ organizations signed on in support

✓ Consider the evidence on dietary patterns, obesity, and cancer risk
  ✓ Examine dietary patterns and components of dietary patterns
  ✓ 9 diet-related cancers
  ✓ 12 obesity-related cancers

✓ Recommend a dietary pattern rich in whole grains, vegetables, fruits, and beans and that limits processed foods high in fat, starches, or sugars, red meats and processed meats, and sugar-sweetened drinks.

✓ Advise that for cancer prevention, it is best not to drink alcohol.
  ✓ Prioritize the systematic review on alcohol intake and cancer risk

✓ Recommend that new mothers breastfeed their baby, if they can, as breastfeeding can offer cancer protection for both the mother and child.
AICR’S Recommendations for the DGA

✓ Provide recommendations for **dietary patterns**, rather than individual foods and nutrients

✓ Address the strong, direct **link between excess body weight and cancer risk**

✓ Utilize a **life course** approach

✓ Utilize the DGAC’s recommendation for a healthy dietary pattern consisting of **mostly plant-based foods with limits on or avoidance of unhealthful components**
  ✓ Emphasize that the greatest health benefits come from **following the guidelines as a package** instead of individually

✓ Incorporate the DGAC’s recommendation to further **reduce added sugars to no more than 6%** of calories

✓ Incorporate the DGAC’s recommendation for **males to reduce alcohol intake to no more than 1 drink per day**

✓ Provide **clear rationale** when the DGA omits part of the DGAC’s conclusions

✓ Provide clear, evidence-based recommendations for **educational and policy, systems and environmental change strategies** aimed at increasing adherence to the DGA.
Engagement in the DGA Development Process Helps to Amplify the Research

✓ AICR’s comments
  ✓ Reflect the evidence in AICR’s CUP reports and 10 Cancer Prevention Recommendations
  ✓ Were informed by an expert group of leading researchers

✓ Educated the Scientific Advisory Committee, federal staff, and others about the evidence on diet and alcohol and cancer risk

✓ Earned media on the Dietary Guidelines release had a reach of 620 million+!
  ✓ 85 online media hits following the release of the DGA including quotes or interviews in CNN, ABC, NBC, CBS and the Wall Street Journal
  ✓ Radio interviews with statewide networks in GA, NC, SC, TX, VA, and Washington, DC’s top news radio station
  ✓ Op-ed in The Hill
Comparison of the DGA with AICR’s Recommendations

A BLUEPRINT TO BEAT CANCER

How to Prevent Cancer: 10 Recommendations

AICR is committed to putting what we know about cancer prevention into action. Our panel of world-renowned independent experts from across the globe have reviewed decades of evidence and from their conclusions have developed the most reliable cancer prevention lifestyle advice currently available. This is summarized in our 10 Cancer Prevention Recommendations.

Source: AICR

Source: Dietaryguidelines.gov
Dietary Guidelines 2020-2025 Topline Messages

1. Follow a healthy dietary pattern at every life stage
2. Customize and enjoy nutrient-dense food and beverage choices to reflect personal preferences, cultural traditions, and budgetary considerations
3. Focus on meeting food group needs with nutrient-dense foods and beverages, and stay within calorie limits
4. Limit foods and beverages higher in added sugars, saturated fat, and sodium, and limit alcoholic beverages.

Source: Dietaryguidelines.gov
Body Weight

AICR’s Recommendation

• Be a healthy weight.
• Maintaining a healthy weight is one of the most important things you can do to protect yourself from cancer.

Dietary Guidelines

• From 12 months through older adulthood, follow a healthy dietary pattern across the lifespan to meet nutrient needs, help achieve a healthy body weight, and reduce the risk of chronic disease.
• Focus on meeting food group needs with nutrient-dense foods and beverages, and stay within calorie limits.

Source: AICR
AICR’s Recommendation

- Make **whole grains, vegetables, fruits** and **pulses (legumes)** such as beans and lentils a major part of your normal diet.

Dietary Guidelines

- The core elements that make up a healthy dietary pattern include:
  - **Vegetables** of all types
  - **Fruits**, especially whole fruit
  - **Grains**, at least half of which are **whole grain**
  - **Dairy**, including fat-free or low-fat milk, yogurt, and cheese, and/or lactose-free versions and fortified soy beverages and yogurt as alternatives
  - **Protein foods**, including lean meats, poultry, and eggs; **seafood; beans, peas, and lentils**; and nuts, seeds, and soy products
  - **Oils**, including vegetable oils and oils in food, such as seafood and nuts

Source: AICR
Dietary Pattern

AICR’s New American Plate

• Cover at least 2/3 of your plate with plant foods such as whole grains, vegetables, fruit and beans.

Source: AICR

USDA/HHS MyPlate

• Make half your plate fruits and vegetables.

Source: MyPlate.gov
Foods and Components to Limit

AICR’s Recommendation

- Limit Consumption of “Fast Foods” and Other **Processed Foods** That are High In **Fat, Starches, or Sugars**

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Dietary Guidelines

- Limit foods and beverages higher in **added sugars, saturated fat, and sodium**
  - **Added sugars**—Less than 10 percent of calories per day starting at age 2. Avoid foods and beverages with added sugars for those younger than age 2.
  - **Saturated fat**—Less than 10 percent of calories per day starting at age 2.
  - **Sodium**—Less than 2,300 milligrams per day—and even less for children younger than age 14.
Red and Processed Meats

AICR’s Recommendation

• **Limit Consumption** of Red and Processed Meat
  • Limit **red meat** to no more than about **12-18 ounces (cooked) per week**.
  • Eat **little, if any, processed meat**.

Dietary Guidelines

• Lean meat is part of the “Protein Foods” group, one of the **core elements of a healthy dietary pattern**.
  • Healthy U.S.-Style Dietary Pattern includes 26 oz per day of meat, poultry, and eggs at the 2,000 calorie level.

• Most intake of meats and poultry should be from **fresh, frozen, or canned**, and in lean forms (e.g., chicken breast or ground turkey) **versus processed meats** (e.g., hot dogs, sausages, ham, luncheon meats).
Sugar-Sweetened Drinks

AICR’s Recommendation

- Limit Consumption of Sugar-Sweetened Drinks
  - Drink mostly water and unsweetened drinks.

Dietary Guidelines

- Below age 2: SSBs (e.g., regular soda, juice drinks [not 100% fruit juice], sports drinks, and flavored water with sugar) should not be given.

- For ages 2-18: SSBs (e.g., soda, fruit drinks, sports and energy drinks) are not necessary in the child or adolescent diet nor are they a component of the USDA Dietary Patterns.
  - Decreasing consumption of SSBs to reduce added sugars intake will help youth achieve a healthy dietary pattern.

- For adults 19-59: SSBs and sweetened coffees and teas contribute over 40 percent of daily intake of added sugars.
  - Intake of SSBs should be limited to small amounts and most often replaced with beverage options that contain no added sugars, such as water.
Alcohol

AICR’s Recommendation

• For cancer prevention, it is **best not to drink alcohol**.

Dietary Guidelines

• Adults of legal drinking age can choose not to drink, or to drink in moderation by limiting intake to **2 drinks or less in a day for men and 1 drink or less in a day for women**, when alcohol is consumed.
  • **Drinking less is better for health** than drinking more.
  • Emerging evidence suggests that even drinking within the recommended limits may increase the overall risk of death from various causes, such as from **several types of cancer** and some forms of cardiovascular disease. **Alcohol has been found to increase risk for cancer**, and for some types of cancer, the risk increases even at low levels of alcohol consumption (less than **1 drink in a day**). Caution, therefore, is recommended.
Supplements

AICR’s Recommendation

• Do not use supplements for cancer prevention.
• While some supplements can offer benefits in specific circumstances, when it comes to cancer prevention, research shows that supplements don’t offer the same benefits as eating whole foods.

Dietary Guidelines

• Because foods provide an array of nutrients and other components that have benefits for health, nutritional needs should be met primarily through foods.
• The Dietary Guidelines recognizes, though, that in some cases, fortified foods and dietary supplements are useful when it is not possible otherwise to meet needs for one or more nutrients (e.g., during specific life stages such as pregnancy).

![Image](image.png)
Lactation

AICR’s Recommendation

• For Mothers: Breastfeed your baby, if you can
  • Breastfeeding can help protect mothers by lowering risk for breast cancer.
  • Breastfed babies may be less likely to develop overweight and obesity when they grow into adulthood.

Dietary Guidelines

• For about the first 6 months of life, exclusively feed infants human milk.
  • Continue to feed infants human milk through at least the first year of life, and longer if desired.
  • Feed infants iron-fortified infant formula during the first year of life when human milk is unavailable.

Source: AICR
Cancer Survivors

AICR’s Recommendation

• After a cancer diagnosis: Follow our recommendations, if you can.

Dietary Guidelines

• The DGA focuses on the general public, including healthy individuals, as well as those with overweight or obesity and those who are at risk of chronic disease.

• The DGA does not provide recommendations for treatment of chronic disease, including cancer.

Source: AICR
WHY It Matters

✓ By law, all federal food and nutrition policies, programs, and messaging must promote the DGA

✓ For example:
  ✓ Nutrition standards for 30 million schoolchildren who participate in the National School Lunch Program daily (pre-COVID)
  ✓ Food package for the 6.2 million low-income women, infants, and children who participate in the WIC program
  ✓ Nutrition education for 43 million participants in the Supplemental Nutrition Assistance Program (SNAP-Ed)
  ✓ Information on nutrition labels

✓ DGA is also used as a model by state and local governments, companies, and nonprofits
WHY It Matters

✓ Cancer is the 2nd leading cause of death in the U.S.
  ✓ Nearly 1.9 million Americans will develop cancer in 2021
  ✓ 600,000+ will die from cancer

✓ Cancer is costly to our health care system
  ✓ $183B annual cost (2015, United States)
  ✓ More than $5B paid out of pocket

✓ About 40% of cancers are preventable
  ✓ Through diet, weight, physical activity, not smoking and getting recommended cancer screenings

Getting people to follow evidence-based cancer prevention recommendations is crucial to our nation’s health and wealth!
MANY Barriers to Healthy Eating

• Most Americans don’t follow the DGA or AICR’s Recommendations
  • Average score on the Healthy Eating Index= 59/100

• Our environments, food policies, and systems make it challenging for everyone to follow the Recommendations
  • Healthy foods must be more accessible, affordable, convenient, tasty, and marketed compared with less healthy options

• Lack of education and information on how to make healthy food choices
  • Better nutrition labels and improved access to a dietitian can help
Join Us!

• For more information and to get involved in AICR’s public policy and advocacy initiatives, please sign up on AICR’s website:

https://www.aicr.org/impact/policy-advocacy/#take-action
THANK YOU!
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