2020 Dietary Guidelines Advisory Committee: Birth to 24 Months Subcommittee

Chair Kay Dewey
Lydia Bazzano
Teresa Davis
Sharon Donovan
Elsie Taveras

Chair/Vice Chair Rep Ron Kleinman

DietaryGuidelines.gov
B24 Topics are being addressed by 4 different Subcommittees

- Data analysis and food pattern modeling
- Beverages and added sugars
- Dietary fats and seafood
- B24

Topics by age group are available at DietaryGuidelines.gov
# Topics addressed by B24 only

<table>
<thead>
<tr>
<th>Lead Subcommittee</th>
<th>Topic</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>B24</td>
<td>Recommended duration of exclusive human milk and/or infant formula feeding</td>
<td>What is the relationship between the duration of exclusive human milk and/or infant formula consumption and 1) growth, size, and body composition; 2) food allergies and atopic allergic diseases; 3) long-term health outcomes; 4) micronutrient status; and 5) developmental milestones, including neurocognitive development?</td>
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<tr>
<td></td>
<td>Frequency and volume of human milk and/or infant formula feeding</td>
<td>What is the relationship between the frequency and volume of human milk and/or infant formula consumption and 1) micronutrient status; and 2) growth, size, and body composition?</td>
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<td>Dietary supplements (e.g., iron, vitamin D, vitamin B12, omega-3 fatty acids)</td>
<td>What is the relationship between specific nutrients from supplements and/or fortified foods consumed and 1) nutrient status; 2) growth, size, and body composition; and 3) bone health?</td>
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Topics by age group are available at DietaryGuidelines.gov
## Topic: Complementary feeding

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<td>B24</td>
<td>What is the relationship between complementary feeding and 1) micronutrient status; 2) growth, size, and body composition; 3) developmental milestones, including neurocognitive development; 4) food allergies and atopic allergic diseases; and 5) bone health?</td>
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| Data analysis and food pattern modeling | Can USDA Food Patterns be established based on the relationships identified? If so, how well do USDA Food Pattern variations meet nutrient recommendations? If nutrient needs are not met, is there evidence to support supplementation and/or consumption of fortified foods to meet nutrient adequacy? |

Topics by age group are available at DietaryGuidelines.gov
## Topic: Beverages

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<tr>
<td>B24</td>
<td>What is the relationship between beverage consumption and growth, size, and body composition?</td>
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| Data analysis and food pattern modeling | What is the relationship between beverage consumption and achieving nutrient and potential food group recommendations? |

Topics by age group are available at DietaryGuidelines.gov
## Topic: Added sugars

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<tbody>
<tr>
<td>B24 and/or Beverages and added sugars TBD</td>
<td>What is the relationship between added sugars consumption and 1) growth, size, and body composition; 2) risk of cardiovascular disease; and 3) risk of type 2 diabetes?</td>
</tr>
<tr>
<td>Data analysis and food pattern modeling</td>
<td>What is the relationship between added sugars consumption and achieving nutrient and potential food group recommendations? How much added sugars can be accommodated in a healthy diet while still meeting food group and nutrient needs?</td>
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</tbody>
</table>

Topics by age group are available at DietaryGuidelines.gov
### Topic: Types of dietary fats

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<tr>
<td>Dietary fats and seafood</td>
<td>What is the relationship between types of dietary fat consumed and 1) neurocognitive development; 2) risk of cardiovascular disease; 3) risk of certain types of cancer; and 4) all-cause mortality?</td>
</tr>
</tbody>
</table>

Topics by age group are available at DietaryGuidelines.gov
### Topic: Seafood

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<tbody>
<tr>
<td>B24 and/or Dietary fats and seafood</td>
<td>What is the relationship between seafood consumption and 1) neurocognitive development; and 2) risk of cardiovascular disease?</td>
</tr>
<tr>
<td>TBD</td>
<td></td>
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</tbody>
</table>

Topics by age group are available at DietaryGuidelines.gov
Human Milk/Infant Formula protocols (presented in July) are being implemented

New systematic reviews:

• Duration, frequency, and volume of exclusive human milk and/or infant formula consumption and growth, size, and body composition

• Duration, frequency, and volume of exclusive human milk and/or infant formula consumption and micronutrient status

• Duration of exclusive human milk and/or infant formula consumption and developmental milestones, including neurocognitive development

Update of existing NESR systematic reviews:

• Duration of exclusive human milk and/or infant formula consumption and food allergy and atopic allergic diseases

• Duration of exclusive human milk and/or infant formula consumption and long-term health outcomes

All protocols discussed in this presentation are available at DietaryGuidelines.gov
Human Milk/Infant Formula protocols (presented in July) are being implemented (continued)

New systematic reviews:

- Duration, frequency, and volume of exclusive human milk and/or infant formula consumption and growth, size, and body composition
- Duration, frequency, and volume of exclusive human milk and/or infant formula consumption and micronutrient status
- Duration of exclusive human milk and/or infant formula consumption and developmental milestones, including neurocognitive development

Update of existing NESR systematic reviews:

- Duration of exclusive human milk and/or infant formula consumption and food allergy and atopic allergic diseases
  - **Diagnosis:** food challenge OR food sensitization AND history of clinical reaction

All protocols discussed in this presentation are available at DietaryGuidelines.gov
Human Milk/Infant Formula protocols (presented in July) are being implemented (continued)

Presented in July:
✓ Analytic frameworks
✓ Inclusion/exclusion criteria

Update:
✓ Literature searches

1980-2016
Human milk/infant formula and:
✓ Food allergies and atopic allergic diseases
✓ Cardiovascular disease outcomes
✓ Diabetes outcomes
  - Growth, size, and body composition
  - Micronutrient status
  - Developmental milestones

2016-2019
Human milk/infant formula and:
✓ Food allergies and atopic allergic diseases
✓ Long-term health
  - Growth, size, and body composition
  - Micronutrient status
  - Developmental milestones
Human Milk/Infant Formula protocols (presented in July) are being implemented (continued)

Presented in July:
✓ Analytic frameworks
✓ Inclusion/exclusion criteria

Update:
✓ Literature searches
✓ Two NESR analysts independently screened the literature search results
✓ Data extraction is underway for:

What is the relationship between the duration, frequency, and volume of exclusive human milk and/or infant formula consumption and micronutrient status?

Iron: 8 articles  Vitamin D: 1 article
Zinc: 3 articles  Vitamin B12: 0 articles
Iodine: 0 articles  Fatty acids: 10 articles
Nutrients from Supplements and Fortified Foods protocols (presented in July) are being implemented

New systematic reviews:

- Specific nutrients* from supplements and/or fortified foods consumed during infancy and toddlerhood and nutrient status
- Specific nutrients* from supplements and/or fortified foods consumed during infancy and toddlerhood and growth, size, and body composition
- Specific nutrients* from supplements and/or fortified foods consumed during infancy and toddlerhood and bone health

*Iron, Vitamin D, Vitamin B12, Omega-3 Fatty Acids

All protocols discussed in this presentation are available at DietaryGuidelines.gov
Nutrients from Supplements and Fortified Foods protocols (presented in July) are being implemented (continued)

Presented in July:
✓ Analytic frameworks
✓ Inclusion/exclusion criteria

Update:
✓ Literature search is underway

All protocols discussed in this presentation are available at DietaryGuidelines.gov
We have been meeting with other subcommittees to discuss cross-cutting topics relevant to B24

Data Analysis and Food Pattern Modeling

• Availability of data for B24 age group:
  0<6 mo, 6<12 mo, 12<24 mo

• Minimum sample size needed/ feasibility of stratifying by milk source (human milk, formula, mixed) to examine food group and nutrient intake at 6<12 and 12<24 mo

• Adequacy of information on human milk nutrient content

• Identification of priority nutrients

Dietary Fats and Seafood

• Developmental outcomes 0-2 years

• Developing protocols for B24 (pending)
Next Steps

Continue to implement the developed protocols:

• Duration, frequency, and volume of human milk/infant formula and growth, size, and body composition
• Duration, frequency, and volume of human milk/infant formula and micronutrient status
• Duration of human milk/infant formula and developmental milestones
• Duration of human milk/infant formula and food allergy/atopic allergic diseases
• Duration of human milk/infant formula and long-term health outcomes
• Specific nutrients from supplements and fortified foods and nutrient status
• Specific nutrients from supplements and fortified foods and growth, size, and body composition
• Specific nutrients from supplements and fortified foods and bone health
Next Steps (continued)

Continue working across subcommittees on cross-cutting topics

• Data Analysis and Food Pattern Modeling
• Dietary Fats and Seafood
• Beverages and Added Sugars

Develop the remaining protocols:

• Complementary feeding and micronutrient status
• Complementary feeding and growth, size, and body composition
• Complementary feeding and developmental milestones
• Complementary feeding and food allergy/atopic allergic diseases
• Complementary feeding and bone health
### 2020 Dietary Guidelines Advisory Committee: Birth to 24 Months Subcommittee

#### Members:
- Teresa Davis
- Kay Dewey
- Sharon Donovan
- Lydia Bazzano
- Ron Kleinman

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- Darcy Güngör
- Jen Lerman
- Emily Madan
- Kelley Scanlon
- Julie Obbagy
- Eve Stooey (DFO rep)
- Sara Scinto-Madonich
- Nancy Terry
- Sudha Venkatramanan
- Laural English
- Jenna Fahle (Detail)

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2020 Dietary Guidelines Advisory Committee:
Data Analysis and Food Pattern Modeling

Regan Bailey
Jamy Ard
Teresa Davis
Timothy Naimi
Jamie Stang

Barbara Schneeman

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Approach to Answer Question: Data Analysis

*current protocol inclusive of life stages, but B-24 elements rely on committee discussion
Status of Questions

• Developing the plan:
  • Current intakes of food groups and nutrients
  • Nutrients of public health concern
  • Current dietary patterns and beverages
  • Tracking of dietary intake, particularly dietary patterns, across life stages

All protocols discussed in this presentation are available at DietaryGuidelines.gov
General Updates:

• The life stage for infants and toddlers is specified as birth to less than 24 months in the analytic framework.
Approach to Answer Question: Data Analysis
Nationally representative sample of the U.S. population

Life stages:
• Infants and toddlers (B<24 months)

*Note: Exceptions will be noted*

Analysis of Intakes Stratified by Infant Milk Source
Ages 6<12 months
• All infants
• Human milk feeding – no formula
• Those receiving any formula, includes mixed feeding

Ages 12<24 months
• All infants
• Human milk feeding – no formula
• Those receiving any formula, includes mixed feeding
• Those receiving neither formula nor human milk
What We Eat in America, National Health and Nutrition Examination Survey (WWEIA, NHANES)

- Cross-sectional, nationally representative dietary intake data
  - USDA Food and Nutrient Database for Dietary Studies
  - USDA Food Patterns Equivalents Database
  - WWEIA Food Categories
  - NHANES Dietary Supplement Database

Breastfeeding initiation and duration:
U.S. National Immunization Survey 2017-2018
Key Definitions

- **Human milk** – Mother’s own milk provided at the breast (i.e., nursing) or expressed and fed fresh or after refrigeration/ freezing; donor milk is not examined in this review.

- **Complementary foods and beverages (CFB)** – Foods and beverages other than human milk or infant formula (liquids, semisolids, and solids) provided to an infant or young child to provide nutrients and energy.

- **Human milk feeding** – Feeding human milk alone or in combination with infant formula and/or CFB such as cow’s milk.
Key Definitions

- **Infant formula** – Commercially prepared infant formula meeting FDA and/or Codex Alimentarius international food standards

- **Mixed feeding** – Feeding human milk and infant formula but not CFB such as cow’s milk

- **Exclusive human milk feeding** – Feeding human milk alone and not in combination with infant formula and/or CFB such as cow’s milk; inclusive of WHO definitions of “exclusive” and “predominant” breastfeeding, which permit limited quantities of drops or syrups containing vitamins, minerals, or medicines; water and water-based drinks such as sweetened water and teas; fruit juice; oral rehydration salts solution; and ritual fluids
Describe/evaluate current intakes of food groups and nutrients

*B-24 Elements*

Approach to Answer Question: Data Analysis
Analytic Framework: Food Group Intakes

- Breastfeeding initiation and duration rates
- Prevalence of any reported food group intake
- Mean intakes of food groups and subgroups
- Food category sources of food group intakes
**Proposed Analyses and Stratification Plan**

<table>
<thead>
<tr>
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<th>Age in Months</th>
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<tbody>
<tr>
<td></td>
<td>&lt;4</td>
</tr>
<tr>
<td>Prevalence of CFB</td>
<td>Total</td>
</tr>
<tr>
<td>Prevalence of Food Groups</td>
<td>--</td>
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<tr>
<td>Mean Intakes of Food Groups</td>
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<tr>
<td>Food Category Sources of Food Groups</td>
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</table>
Analytic Framework: Nutrient Intakes

• **Mean intakes of nutrients from**
  • Infant milk sources, foods and beverages, and dietary supplements

• **Usual intake distribution of nutrients**
  • Infant milk sources, foods and beverage
  • Infant milk sources, foods, beverages, and dietary supplements

• **Nutrient intakes compared to DRIs**
  1 yr olds are a part of 2013-2016 analysis of the 1-3 yr old DRI age grouping

• **Food category sources of nutrient intakes**

Data Analysis and Food Pattern Modeling
2020 Dietary Guidelines Advisory Committee: Meeting 3
Describe/evaluate nutrients of public health concern

B-24 Elements

Approach to Answer Question: Data Analysis
Analytic Framework: Nutrient Intakes

• Usual intake distribution of nutrients
  • Infant milk sources, foods and beverage
  • Infant milk sources, foods, beverages, and dietary supplements

• Nutrient intakes compared to Dietary Reference Intakes

NOTE: Analysis stratified by infant milk source

1 yr olds are a part of 2013-2016 analysis of the 1-3 yr old DRI age grouping
Describe/evaluate current dietary patterns and beverage consumption

*B-24 Elements*

Approach to Answer Question: Data Analysis
Analytic Framework

Dietary Patterns

• Food group and subgroup* intakes per 100 calories of complementary foods and beverages

Beverage consumption

• Percent reporting a given beverage type
• Average amount consumed per day in ounces
• Nutrient/food component contribution of reported beverages
Discussion

Approach to Answer Question: Data Analysis
Next Steps

- Integrate nutrient intakes from dietary supplements
  - data anticipated for release in fall 2019
- Review and Summarize data analysis results
- Draft conclusion statements
- Draft food pattern modeling protocols
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