

2015 DGAC • MEETING 3
March 14, 2014

Subcommittee 4:

Food & Physical Activity Environments

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Scope

Food and Physical Activity Environments

- **Physical environment**
(key settings – neighborhood/community food access, food retail, schools, child care, workplace, home)
- **Macro environment**
(e.g., message environment: food marketing).

- Understand and assess the role of food environment in promoting or hindering healthy eating in various settings and subpopulations.
- Identify the most effective evidence-based diet-related programs, practices, environmental and policy approaches ("what works") to improve health and reduce disparities.

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Scope

Review the evidence on the effects of food and physical environments on dietary intake, behaviors and health outcomes (e.g., weight status)

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Key Topic Areas

<ul style="list-style-type: none"> • <i>Food access</i> • <i>Schools</i> • <i>Early child care and education settings</i> • <i>Worksite settings</i> • <i>Afterschool settings</i> 	<ul style="list-style-type: none"> • Food marketing • Nutrition assistance programs • Post secondary education settings • Multi-component community-based interventions
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Invited Experts and Consultants

Invited Experts
Individuals invited by the SC, usually on a one time basis, to provide their expertise to inform the SC's work. Invited experts do not participate in decisions at the SC level.

Consultant SC Members
Individuals sought by the SC to participate in SC discussions and decisions on an ongoing basis but are not members of the full DGAC. Like DGAC members, consultants complete training and have been reviewed and cleared through a formal process within the Federal government.

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Experts & Consultants

Invited Experts
None

Consultant SC Members
None

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Questions Addressed Today

Food Access

What is the relationship between neighborhood/community food access (i.e., availability and affordability) in food retail settings (i.e., supermarkets, grocery stores, corner stores, convenience stores and other food retail settings) and:

1. Individuals' dietary intake and quality?
2. Weight status?

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Questions Addressed Today

Early Childhood (Children ages 2 to 5)

1. What early childhood education programs, policies and practices have had a positive effect on dietary intake and eating behavior ?
2. What is the effect of early childhood education and care environment dietary interventions on dietary intake, quality and behavior ?
3. What is the effect of early childhood education and care environment diet and physical activity interventions on weight/growth and development outcomes?

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Questions Addressed Today

Schools

1. What school-based approaches have had a positive impact on diet in school-aged children (e.g., garden-based, fresh fruit and vegetables, farm-to-school, policies for vending machines, nutrition education and multi-component interventions)?
2. What is the effect of school-based interventions (e.g., school gardens or farm-to-school programs) on dietary intake, quality and behavior in school-aged children?
3. What is the effect of school-based interventions on weight and growth and development outcomes in school-aged children?

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Food Access Background

Food accessibility includes:

- Accessibility to sources of healthy food, as measured by distance to a store or by the number of stores in an area.
- Individual-level resources that may affect accessibility, such as family-income or vehicle availability.
- Neighborhood-level indicators of resources, such as average income of the neighborhood and the availability of public transportation.

Source: USDA/ERS Food Access Research Atlas

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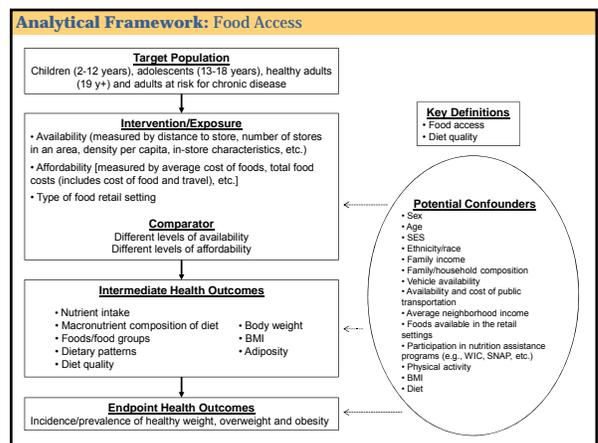
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Food Access Questions

What is the relationship between neighborhood/community food access (i.e., availability and affordability) in food retail settings (i.e., supermarkets, grocery stores, corner stores, convenience stores and other food retail settings) and:

1. Individuals' dietary intake and quality?
2. Weight status?

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Food Access

Literature Search: Inclusion/Exclusion Criteria

- RCTs, non-RCTs, prospective cohort studies and cross-sectional studies conducted in the US
- Published in English in peer-reviewed journals between 2004-2013
- Exposure: availability to food retail settings and affordability
- Subjects: ≥ 2 years; generally healthy or with elevated chronic disease risk
- Weight outcomes: weight, BMI, BMI z-score, adiposity; prevalence of healthy weight, overweight and obesity
- Dietary outcomes: dietary intake and quality

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Food Access

Literature Search Results

```

    graph TD
      A[Articles identified through database searching  
(PubMed, Embase, Cochrane, Navigator)  
n=547] --> B[Articles screened (title)  
n=547]
      B --> C[Articles excluded  
n=382]
      B --> D[Articles screened (abstract)  
n=165]
      D --> E[Articles excluded  
n=107]
      D --> F[Full-text articles reviewed for eligibility  
n=56]
      F --> G[Full-text articles excluded  
n=16]
      F --> H[Studies included in systematic review  
n=40  
Diet (n=14)  
Obesity (n=22)  
Diet & Obesity (n=4)]
    
```

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Early Childhood

Questions

1. What early childhood education programs, policies and practices have had a positive effect on dietary intake and eating behavior in children two to five years of age?
2. What is the effect of early childhood education and care environment dietary interventions on dietary intake, quality and behavior in children two to five years of age?
3. What is the effect of early childhood education and care environment diet and physical activity interventions on weight/growth & development outcomes in children two to five years of age?

Approach: Existing Systematic Reviews

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Analytical Framework: Early Childhood

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    graph TD
      TP[Target Population  
Children (2-5 years)] --> IE[Intervention/Exposure  
Programs, policies and practices in early child education  
and care settings]
      IE --> C[Comparator  
Different types of programs (settings), policies and practices;  
control]
      C --> IHO[Intermediate Health Outcomes  
• Nutrient intake • Preferences  
• Macronutrient composition of diet • Behaviors  
• Foods/food groups • Body weight  
• Diet quality • BMI  
• Adiposity]
      IHO --> EHO[Endpoint Health Outcomes  
• Prevalence of healthy weight, overweight and obesity  
• Inappropriate growth and development in children]
      TP --- KD[Key Definitions  
Early childhood]
      C --- PC[Potential Confounders  
• Sex  
• Age  
• SES  
• Ethnicity/race  
• Physical activity  
• Program characteristics  
• BMI  
• Diet]
    
```

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Early Childhood

Literature Search: Inclusion/Exclusion Criteria

- Systematic reviews that include RCTs, non-RCTs, prospective cohort, cross-sectional and pre- and post-policy studies
- Published in English in peer-reviewed journals between 2010 and present
- Exposure: different programs, policies and practices in early child education and care settings
- Subjects: children 2-5 years
- Weight outcomes: body weight, BMI, BMI z-score, adiposity; incidence of healthy weight, overweight and obesity; inappropriate growth and development
- Dietary outcomes: dietary intake, quality, behaviors and preferences

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Early Childhood

Literature Search Results for Duplication Assessment

```

    graph TD
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(PubMed, Embase, Cochrane, Navigator)  
n=149] --> B[Articles screened (title & abstract)  
n=149]
      B --> C[Articles excluded  
n=128]
      B --> D[Full-text articles reviewed for eligibility  
n=21]
      D --> E[Full-text articles excluded  
n=18]
      D --> F[Studies included in duplication assessment  
n=3]
    
```

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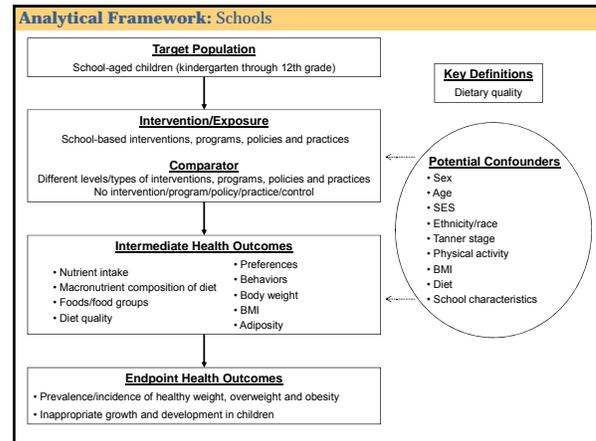
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Schools Questions

1. What school-based approaches have had a positive impact on diet in school-aged children (e.g., garden-based, fresh fruit and vegetables, farm-to-school, policies for vending machines, nutrition education and multi-component interventions)?
2. What is the effect of school-based interventions (e.g., school gardens or farm-to-school programs) on dietary intake, quality and behavior in school-aged children?
3. What is the effect of school-based interventions on weight and growth and development outcomes in school-aged children?

Approach: To Be Determined

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Physical Activity Approach to Addressing Topic Area

1. DGAC agreed to use existing systematic reviews and reports to address physical activity topic.
2. Identified recent reports to serve as primary sources of evidence.
3. Reviewed key findings of reports relevant to the major DGAC topic areas.
4. Extracted key findings and methodology considerations for each report.
5. Developed research questions related to SCs' work.
6. Identified key findings from reports to answer questions.

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Next Steps: Topic Areas to Consider

- Food access
- Schools
- Early child care and education settings
- Worksite settings
- Afterschool settings
- Food marketing
- Nutrition assistance programs
- Post secondary education settings
- Multi-component community-based interventions

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Discussion

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