



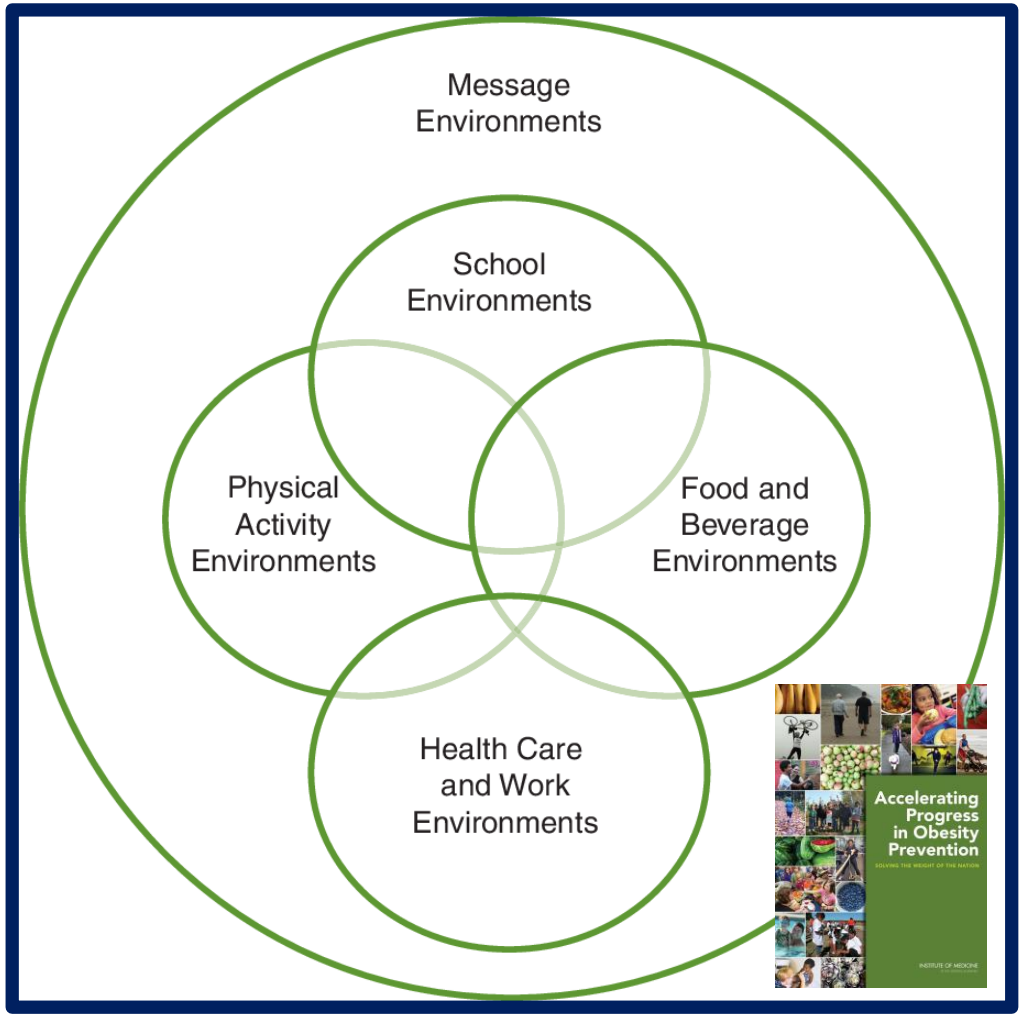
# Co-benefits of promoting healthy eating where children live, learn, and play: An exploration of existing literature (ECE preliminary findings)





Fleischhacker S, Bleiweiss-Sande R, Benjamin-Neelon S, Reynolds M, Miller A, Hager ER, Seligman H & Bleich SN

# Background




- **Childhood obesity intersects with eating patterns**
- **Policy, systems and environment (PSE) strategies a critical ingredient**
- **“Co-benefits” beyond promoting healthy eating**
  - **Multiple benefits or synergies are terms to characterize the added benefits we get when we act to promote a specific behavior (often used in the climate change literature), above and beyond direct, intended, benefits**

# Co-benefits of designing communities for active living: an exploration of literature

James F Sallis, Chad Spoon, Nick Cavill, Jessa K Engelberg, Klaus Gebel, Mike Parker, Christina M Thornton, Debbie Lou, Amanda L Wilson, Carmen L Cutter & Ding Ding

*International Journal of Behavioral Nutrition and Physical Activity* **12**, Article number: 30 (2015) | Cite this article



## Abstract

To reverse the global epidemic of physical inactivity that is responsible for more than 5 million deaths per year, many groups recommend creating "activity-friendly environments." Such environments may have other benefits, beyond facilitating physical activity, but these potential co-benefits have not been well described. The purpose of the present paper is to explore a wide range of literature and conduct an initial summary of evidence on co-benefits of activity-friendly environments. An extensive but non-systematic review of scientific and "gray" literature was conducted. Five physical activity settings were defined: parks/open space/trails, urban design, transportation, schools, and workplaces/buildings. Several evidence-based activity-friendly features were identified for each setting. Six potential outcomes/co-benefits were searched: physical health, mental health, social benefits, safety/injury prevention, environmental sustainability, and economics. A total of 418 higher-quality findings were summarized. The overall summary indicated 22 of 30 setting by outcome combinations showed "strong" evidence of co-benefits. Each setting had strong evidence of at least three co-benefits, with only one occurrence of a net negative effect. All settings showed the potential to contribute to environmental sustainability and economic

**In 2015, Sallis et al. explored the evidence on co-benefits of activity-friendly environments and found substantial evidence that designing community environments that make physical activity attractive and convenient is likely to produce additional important benefits**

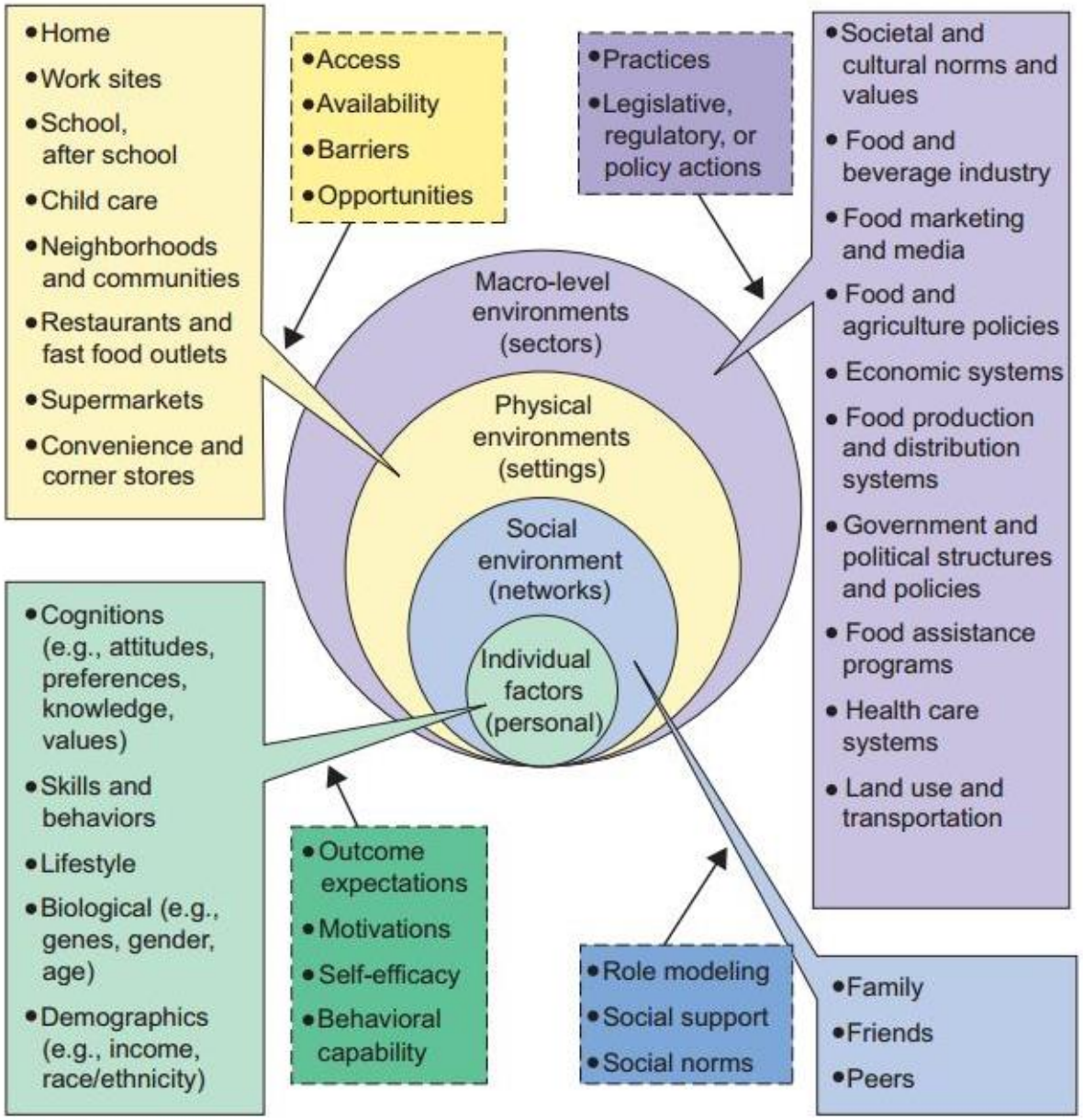



**Figure 1**
An ecological framework depicting the multiple influences on what people eat.

- **Informed by the ecological principles of multiple levels of influence on behavior and interactions across levels as put forth by Story et al. (*Annu Rev Public Health* 2008;29:253-272)**
- **Thought leader input from academic, government, and advocacy sectors (n=20)**

# Methods

- Librarian consultation
- Input garnered from an exercise focused on co-benefits led by Healthy Eating Research (HER), a national program of the Robert Wood Johnson Foundation (RWJF), at their 2019 annual grantee meeting
- Developed search terms specific to four prioritized settings and sectors
- Conducted searches July through December 2019 and then updated during July and August 2020
  - The Cumulative Index to Nursing and Allied Health Literature (CINAHL), Education Resources Information Center (ERIC), PsychINFO, and PubMed
  - Google Scholar and Google used for targeted searches in emerging areas such as healthcare where the evidence base was not as extensive
- Focused on umbrella and systematic reviews, or, if needed, other forms of review
  - Narrative reviews and gray literature used when needed
- Data extraction focused on the relevant co-benefit(s) described, PSE strategies used, and implications for research, policy, and practice
  - Inter-rater reliability was used for coding ECE (RS, SBN, SF), school (SF, MR), community (WIC) (SF, AM), and healthcare (SF, PP), with high levels of agreement


# Aims

**1) Explore the literature across the following four settings and sectors:**

- **Early care and education (ECE),**
- **School and after school (including summer months),**
- **Community-at-large, and**
- **Health care**

**For intended benefit (dietary intake) and seven potential co-benefits:**

**(1) Academic (including child development related outcomes),**

**(2) Economics (at the individual level such as poverty alleviation and at the community level such as economic development and job creation),**

**(3) Environmental sustainability (or planetary health),**

**(4) Food insecurity,**

**(5) Health (focusing on weight status or BMI),**

**(6) Health equity and**

**(7) Social emotional benefits**

**2) Provide insights about knowledge gaps and opportunities, along with implications for research, policy and practice**


In 2016, more than 60% of 3-5 year old children in the US were enrolled in center-based ECE, such as preschools or Head Start programs, and spent an average of 30 hours per week in care

"I QUIT MY JOB TO TAKE CARE OF MY 19-MONTH-OLD DAUGHTER BECAUSE WE JUST COULDN'T FIND FULL-TIME CHILD CARE"
NIKA

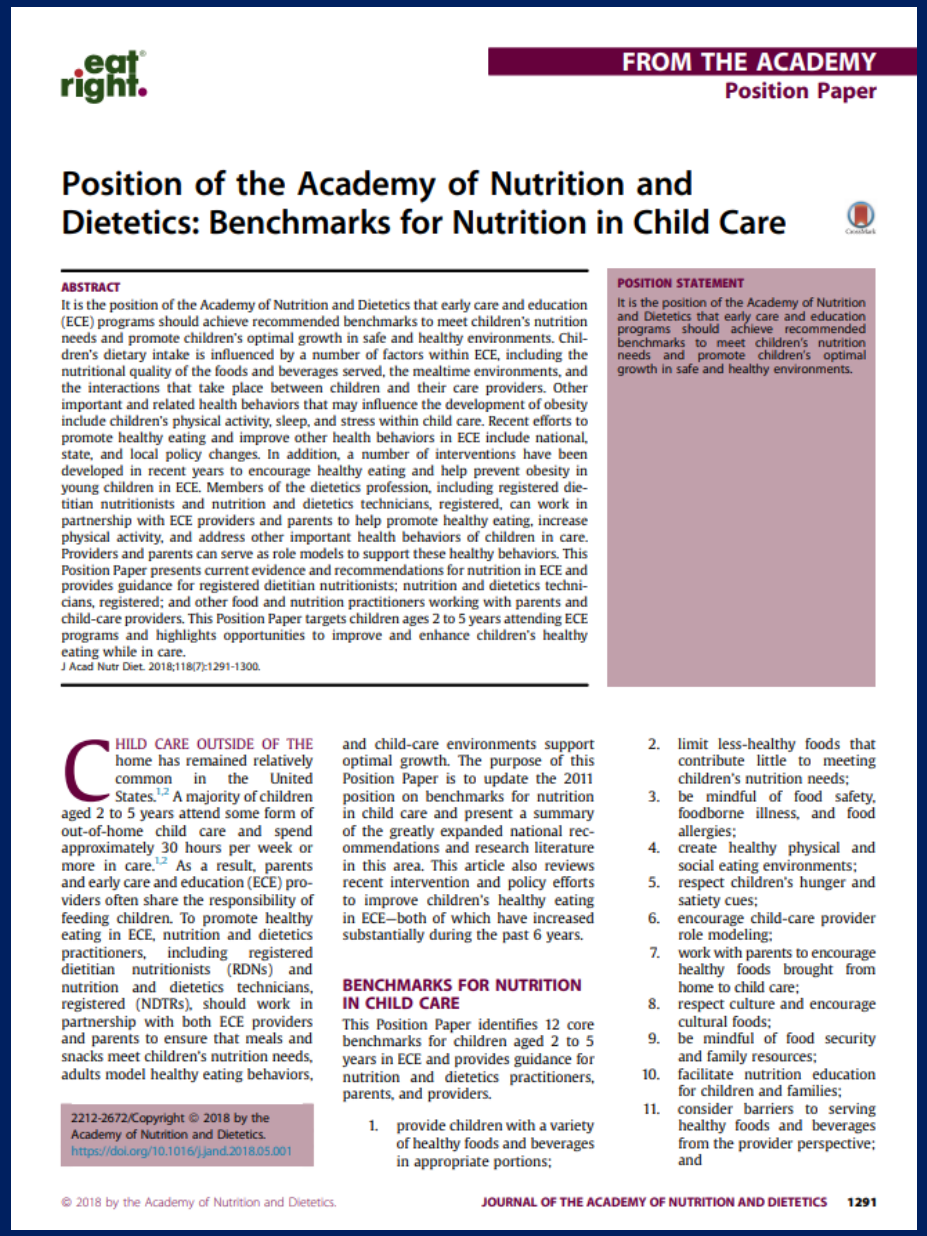

Evidence suggests ECE plays a critical role in children's social, psychological, physical, and intellectual development and helps to establish lifelong eating, activity, and other important health patterns


In 2016, USDA made significant changes to the CACFP nutrition standards to align with the latest *Dietary Guidelines for Americans* and to include a greater variety of vegetables and fruits, more whole grains, and less added sugar and saturated fat

HEAD START

OUR PARENTS ARE ACTIVE WITH SCHOOL

Head Start participates in CACFP and also has established their own Program Performance Standards that require participating programs to serve one-third of daily child nutrition requirements for part-day care, and one-half of daily requirements for full-day care



eat right.

FROM THE ACADEMY
Position Paper

# Position of the Academy of Nutrition and Dietetics: Benchmarks for Nutrition in Child Care


**ABSTRACT**

It is the position of the Academy of Nutrition and Dietetics that early care and education (ECE) programs should achieve recommended benchmarks to meet children's nutrition needs and promote children's optimal growth in safe and healthy environments. Children's dietary intake is influenced by a number of factors within ECE, including the nutritional quality of the foods and beverages served, the mealtime environments, and the interactions that take place between children and their care providers. Other important and related health behaviors that may influence the development of obesity include children's physical activity, sleep, and stress within child care. Recent efforts to promote healthy eating and improve other health behaviors in ECE include national, state, and local policy changes. In addition, a number of interventions have been developed in recent years to encourage healthy eating and help prevent obesity in young children in ECE. Members of the dietetics profession, including registered dietitian nutritionists and nutrition and dietetics technicians, registered, can work in partnership with ECE providers and parents to help promote healthy eating, increase physical activity, and address other important health behaviors of children in care. Providers and parents can serve as role models to support these healthy behaviors. This Position Paper presents current evidence and recommendations for nutrition in ECE and provides guidance for registered dietitian nutritionists; nutrition and dietetics technicians, registered; and other food and nutrition practitioners working with parents and child-care providers. This Position Paper targets children ages 2 to 5 years attending ECE programs and highlights opportunities to improve and enhance children's healthy eating while in care.



J Acad Nutr Diet. 2018;118(7):1291-1300.


**POSITION STATEMENT**

It is the position of the Academy of Nutrition and Dietetics that early care and education programs should achieve recommended benchmarks to meet children's nutrition needs and promote children's optimal growth in safe and healthy environments.

CHILD CARE OUTSIDE OF THE home has remained relatively common in the United States.[1,2] A majority of children aged 2 to 5 years attend some form of out-of-home child care and spend approximately 30 hours per week or more in care.[1,2] As a result, parents and early care and education (ECE) providers often share the responsibility of feeding children. To promote healthy eating in ECE, nutrition and dietetics practitioners, including registered dietitian nutritionists (RDNs) and nutrition and dietetics technicians, registered (NDTRs), should work in partnership with both ECE providers and parents to ensure that meals and snacks meet children's nutrition needs, adults model healthy eating behaviors, and child-care environments support optimal growth. The purpose of this Position Paper is to update the 2011 position on benchmarks for nutrition in child care and present a summary of the greatly expanded national recommendations and research literature in this area. This article also reviews recent intervention and policy efforts to improve children's healthy eating in ECE—both of which have increased substantially during the past 6 years.



https://doi.org/10.1016/j.jand.2018.05.001


## BENCHMARKS FOR NUTRITION IN CHILD CARE

This Position Paper identifies 12 core benchmarks for children aged 2 to 5 years in ECE and provides guidance for nutrition and dietetics practitioners, parents, and providers.

1. provide children with a variety of healthy foods and beverages in appropriate portions;
2. limit less-healthy foods that contribute little to meeting children's nutrition needs;
3. be mindful of food safety, foodborne illness, and food allergies;
4. create healthy physical and social eating environments;
5. respect children's hunger and satiety cues;
6. encourage child-care provider role modeling;
7. work with parents to encourage healthy foods brought from home to child care;
8. respect culture and encourage cultural foods;
9. be mindful of food security and family resources;
10. facilitate nutrition education for children and families;
11. consider barriers to serving healthy foods and beverages from the provider perspective; and




- AND paper by Dr. Benjamin-Neelon recommends that centers provide children between one-half and two-thirds of their daily nutrient and energy requirements
- AND has also put forth 12 core benchmarks for nutrition in ECE, including these three examples:
  - Providing children with a variety of healthy foods and beverages in appropriate portions;
  - Limiting less healthy foods and beverages; and
  - Creating healthy physical and social eating environments

# Early Care and Education (ECE)

COVID-19: Guidance for Schools and Childcare Programs

Download factsheet [PDF-1.64MB]



## Why is This Setting Important?

Most young children spend time in care outside of their home, making the ECE setting one of the best places to reach young children with obesity prevention efforts.

- An estimated 73% of children 3-5 years old not yet in kindergarten are in a non-parental care arrangement on a weekly basis. [1]
- ECE centers are the primary weekly care arrangement for more than 7.5 million children birth through age 5 not yet in kindergarten.[1]
- Children birth to 3 years old attending ECE centers spend an average of 32 hours a week at the center.[2]

State ECE systems can promote standards that address nutrition, infant feeding, physical activity, and screen time. ECE facilities can implement practices and programs that support healthy eating and physical activity among young children. These improvements can directly affect what children eat and drink, how active they are, reduce their screen time, support moms who breastfeed, and build a foundation for healthy living.

# Improving early childhood development

5 March 2020 | Guideline


Download (989.3 kB)

## Overview

Enabling young children to achieve their full developmental potential is a human right and an essential requisite for sustainable development. Given the critical importance of enabling children to make the best start in life, the health sector, among other sectors, has an important role and responsibility to support nurturing care for early childhood development.This guideline provides direction for strengthening policies and programmes to better address early childhood development.

It is primarily the family who provides the nurturing care that children need to develop in the earliest years. Many parents and other caregivers need support to put this into practice. Therefore, the guideline contains four recommendations aimed at caregivers, health professionals and other workers who can assist them, as well as policy-makers and other stakeholders. The recommendations relate to i) providing responsive care and activities for early learning during the first 3 years of life; ii) including responsive care and early learning as part of interventions for optimal nutrition of infants and young children; and iii) integrating psychosocial interventions to support maternal mental health into early childhood health and development services.

**Downloads**

Guideline on improving early childhood development: summary

Guideline on improving early childhood development: evidence reviews

**WHO TEAM**

Maternal, Newborn, Child and Adolescent Health, and Ageing

**EDITORS**

WHO

**NUMBER OF PAGES**

80

**REFERENCE NUMBERS**

**ISBN:** 978-92-4-000209-8 6

Therefore, ECE settings have been and will continue to serve as a critical environment for using PSE to help shape children's early eating preferences and behaviors and using these PSE approaches has intended benefits of improving dietary intake and a variety of co-benefits

# Overview of exploration of the ECE literature strategies

**Number of ECE relevant records identified**

- CINAHL (N=1202)
- ERIC (N=2279)
- PsychINFO (N=1284)
- PubMed (N=4664)

→

**After an initial screen for deleting duplicates, titles/abstracts reviewed**

**ECE (N=6548)**

→

**Titles, abstracts or articles reviewed against the following study inclusion and exclusion criteria**

- Peer-reviewed
- Original review articles and if needed research articles – excluded abstracts, conference proceedings, and dissertations
- Published in English
- Included research conducted in the United States
- Reported on PSE to promote healthy eating among children in schools

←

**Articles reviewed as potentially relevant**

**ECE (N=69)**

←

**Articles meeting study criteria**

**ECE (N=19)**

# Improving Dietary Intake – Intended Benefit (n=3)

- **Three reviews assessed dietary intake outcomes of healthy eating interventions using PSE strategies in ECE settings**
- **The most common outcome was fruit and vegetable intake**
  - **Moderate evidence that these types of intervening approaches can increase fruit and vegetable intake**
- **Multicomponent strategies and parent involvement were associated with improved dietary outcomes**

# Health Co-Benefits (n=8)

- Obesity prevention was the most commonly studied co-benefit
- Most included reviews reported mixed results
  - Factors such as combined policy and environmental approaches, parent involvement, and more regulated ECE environments most protective against overweight and obesity
- More regulated eating environments (e.g. Head Start) were associated with lower risk of overweight and obesity compared to less-regulated eating environments (home-based child care)
- State and local ECE policies may also play an important role in obesity prevention
- Policy changes were most successful when combined with other strategies

# Economics Co-Benefits (n=3)


- Reviewed programs such as the Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC), and individual ECE program nutrition policies
  - Gortmaker et al. estimated that the cost-effectiveness of improved ECE policies on obesity outcomes using NAP SACC was low
  - In contrast, Volger et al. estimated that healthy lifestyle interventions implemented in ECE settings at a national scale would be highly cost-effective
- Lack of resources in ECE settings may hamper potential benefit
  - Seward et al. found that lack of resources, and existing environmental context, are cited by staff as major barriers to adhering to dietary guidance
- Hodder et al. noted that there is little evidence of potential unintended economic effects for families, such as increased grocery costs

# Food Security Co-Benefits (n=0)


- **No direct evidence of the impact of healthy eating interventions in ECE settings on food security was identified**
- **However, there is some research demonstrating that exposure to other federal nutrition assistance programs, such as the United States Department of Agriculture (USDA) Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), may play a protective role against overweight and obesity when food insecurity is present**
- **There is also evidence that fruit and vegetable intake is lower among food-insecure children, suggesting that ECE settings may play a key role in establishing healthful dietary patterns early in life and reducing negative health outcomes in children experiencing food insecurity**

# Health Equity Co-Benefits (n=1)

- One narrative review summarized the impact of state and local health policies on health equity in young children

- CACFP and Head Start are two federal policies that aim to reduce health disparities among low-income children
  - Facilities implementing these policies offer healthier meals, snacks and beverages compared to their counterparts
  - However, there is little information regarding the short and long-term impact of these two policies on health equity in children

# Academic (n=3) & Social-Emotional Co-Benefits (n=0)

- **No explicit evidence of child academic development or social/emotional outcomes as co-benefits of healthy eating interventions in ECE settings were identified**
- **Two reviews explained how gardens at ECE settings may promote fine motor development & encourage sensory exploration**
- **One review discussed the co-benefits of farm-to-preschool programming, including child gross motor development, sensory exploration, nutrition and food knowledge, and fruit and vegetable consumption or preference**

# Environmental Sustainability Co-Benefits (n=2)

**Farm-to-preschool programming may also provide parents with opportunities to buy and cook more local produce, leading to positive economic and environmental impacts and a “spillover” effect of healthy eating in the home**

# ECE Research Needs

- Additional monitoring and evaluation is needed to assess further co-benefits of ECE healthy eating policies
- More work on potential unintended consequences
- Cost-effectiveness, long-term sustainability, and success of interventions serving racial/ethnic minority children and those from low-income homes
- Determining a cost-threshold to assist with decision making for stakeholders and policy makers
- Potential impact of interventions on food security in young children; long term impact of food insecurity on obesity
- Best practices for implementing healthy eating policies at the tribal, state, and local levels
- Assessment of gardening-based curricula - promising area for future research
- Effect of dietary intervention on child development or social and emotional outcomes
  - Gardening-based interventions

# ECE COVID-19 Research Needs


- **Given the current COVID-19 pandemic, more work remains to ensure the viability of ECE settings across the country and that caregivers are able to work and afford childcare**
- **And the simultaneous importance and enormous challenge of maintaining the progress made thus fair in ECE amid COVD-19, and the possible implications for young children in the short and long term**

# ECE Co-Benefits Summary


- **Potential co-benefits beyond healthy eating, including economic, behavioral, food security, health equity, child development, and sustainability outcomes**
- **Environmental approaches to healthy eating may face the lowest barriers to implementation**
- **Potential to improve health equity and have beneficial economic impact, particularly when implemented at the federal level**
- **Systems changes, and designing culturally appropriate nutrition lessons, are promising strategies to improve behavioral and health outcomes**


# Across Sector Research Needs

**Further attention should be given to:**

- **Re-envisioning the social safety net; and**
- **Scaling up and sustaining what works**

# Policy & Practice Implications

- **Strengthening the public health impacts of federal nutrition assistance programs (CACFP) and Head Start show great promise**
- **Healthy lifestyle interventions implemented in ECE settings at a national scale could potentially be highly cost-effective**
- **Proper support for new policies and practices, such a staff training and enforcement, were also key factors in successful interventions**
- **Family engagement remains essential, yet difficult to establish**

# Strengths & Limitations

- **A robust but concise approach to a variety of diverse literature across four settings and sectors for the intended benefit and seven potential co-benefits**
- **Inclusive of older, less rigorous reviews, studies and reports**
- **Future efforts might be more restrictive with their study inclusion/exclusion criteria and grade each review or study**
- **Future studies can dive into the methodology used to examine a particular PSE strategy or suite of strategies and assess the current state of the science for a particular setting or sector**
- **There are also several potential other co-benefits that we did not investigate**


# Conclusions

- **Based on a diverse literature, using PSE to promote healthy eating is likely to produce the intended benefit, along with a wide variety of additional co-benefits**
- **Moving forward and looking across all setting and sectors, promoting healthy eating where children live, learn, and play will require concerted, multidisciplinary efforts to build healthier communities using multifaceted approaches**
- **This will require innovative investments that prioritizes health equity to ensure *every* child can achieve optimal health and well-being**





# Co-benefits of promoting healthy eating where children live, learn, and play: An exploration of existing literature (ECE preliminary findings)





Welcome questions & input!

sheilafly9@gmail.com & rachel.sande@jhu.edu