



# The HEROs Study Year 3: Engaging Families To Promote Healthy Eating And Activity Behaviors In Early Childhood

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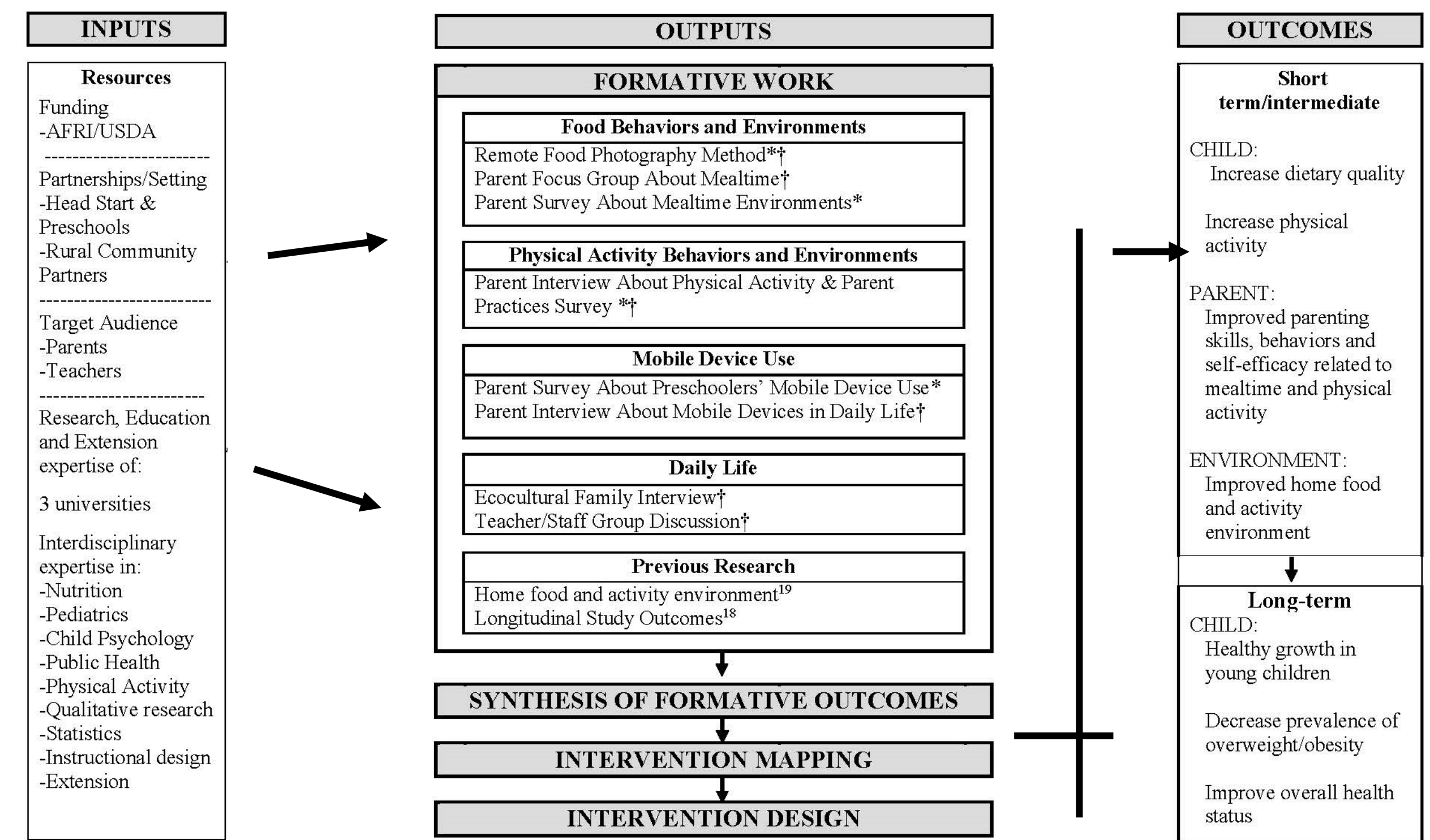
## STUDY OVERVIEW

The overall objective of HEROs (HEalthy EnviRONments) Study is to develop a technology-based, interactive family intervention to promote healthy lifestyles for young children in the family settings.

## PHASE 1: FORMATIVE RESEARCH

**Objective 1:** To understand behaviors, attitudes, facilitators and barriers to improving the home food and activity environments, through **formative research** with parents, Head Start staff and community stakeholders (n=348).

Figure 1. HEROs Formative Research Model Through Ecocultural Lens



## PHYSICAL ACTIVITY

### PARENT BELIEFS AND VALUES RELATED TO ACTIVITY

- Parents believe that children naturally learn fundamental movement skills (FMS, or gross motor skills), so do not see a need to teach children these skills
- Parents value motor skills and overall activity as an opportunity for children to socialize, to feel included, to improve self-confidence, to be healthy and for behavior management (helps get their energy out)

### FAMILY PRACTICES RELATED TO ACTIVITY

- Barriers to PA include high cost and limited availability of organized activities, children's unwillingness or lack of interest in being active and lack of time due to the family's schedule
- Parents use physical activity as a way of communicating the importance of trying and having fun (rather than getting something right on the first try)



## FAMILY MEALTIMES

### PARENT BELIEFS AND VALUES RELATED TO MEALTIME

- Parents place a high value on the evening family meal, and have idealistic goals for family mealtime: everyone eating together at the table, pleasant conversation, children finishing their plates
- Mealtime challenges include time/scheduling constraints and managing children's behavior or attitudes at mealtime (including picky eating, consuming little food or refusal to sit at the table)

*"It's nice to have that interaction as a family, just the bonding."*

*"[an ideal dinner time would be] we all sit down and just have fun, nobody is fighting, nobody is complaining about what's on their plate."*

*"It's just too rushed. You make the meal. You take five minutes to eat it and then you're off to the next thing. It doesn't feel like enough time."*

### CONTEXT OF FAMILY DINNERTIME

- Most mothers eat at the same time and eat similar foods as their child
- A majority of families serve large portions to their child; possibly setting up disappointment if the expectation is that children finish their plate

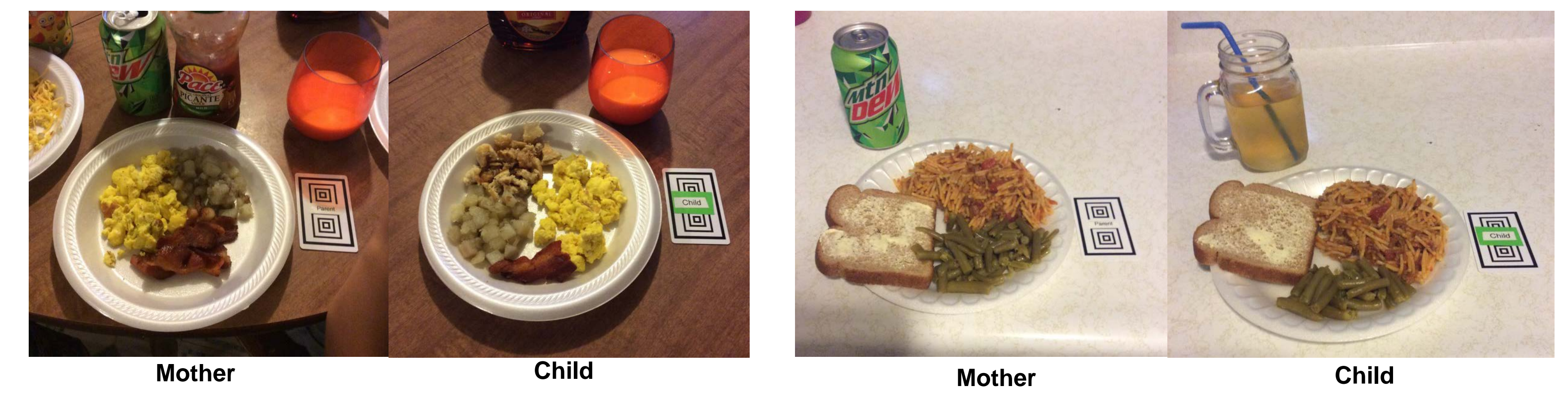


Figure 2. Mother/Child Meal Concordance and Portion Sizes

### QUALITY OF FOODS SERVED AT DINNERTIME

- A majority of dinner meals include protein (usually beef, pork or chicken)
- Many families serve vegetables, but potatoes are the most commonly served vegetable and there is limited variety/quality (few dark leafy greens)
- Few families serve milk, fruit or whole grains at the evening meal
- Families prepare a majority of their meals at home, but frequently rely on processed or convenience foods (frozen, boxed or premade items)

## MOBILE DEVICE USE

Comprehensive findings related to mobile device use have previously been presented and publications have followed.

## PHASE 2 & 3: INTERVENTION DEVELOPMENT & TESTING

**Objective 2:** To **develop a family intervention** which will help children and parents learn together and build skills related to healthy eating and activity.

- Extensive formative work and mixed method approach to synthesizing findings yielded insight into key intervention targets, including positive parent-child interaction around eating and activity
- The intervention will consist of 3 components:
  - Parent workshops (n=8)
  - Child workshop (n=8, simultaneous to parent workshops)
  - Technology component (mobile apps, website, social media)
- In Year 4, an implementation study will be conducted using the PDSA (Plan, Do, Study, Act) framework to test proposed intervention components with a subset of families
  - The PDSA framework will allow for an understanding of which of the proposed intervention components resonates with and drives participants towards behavior change

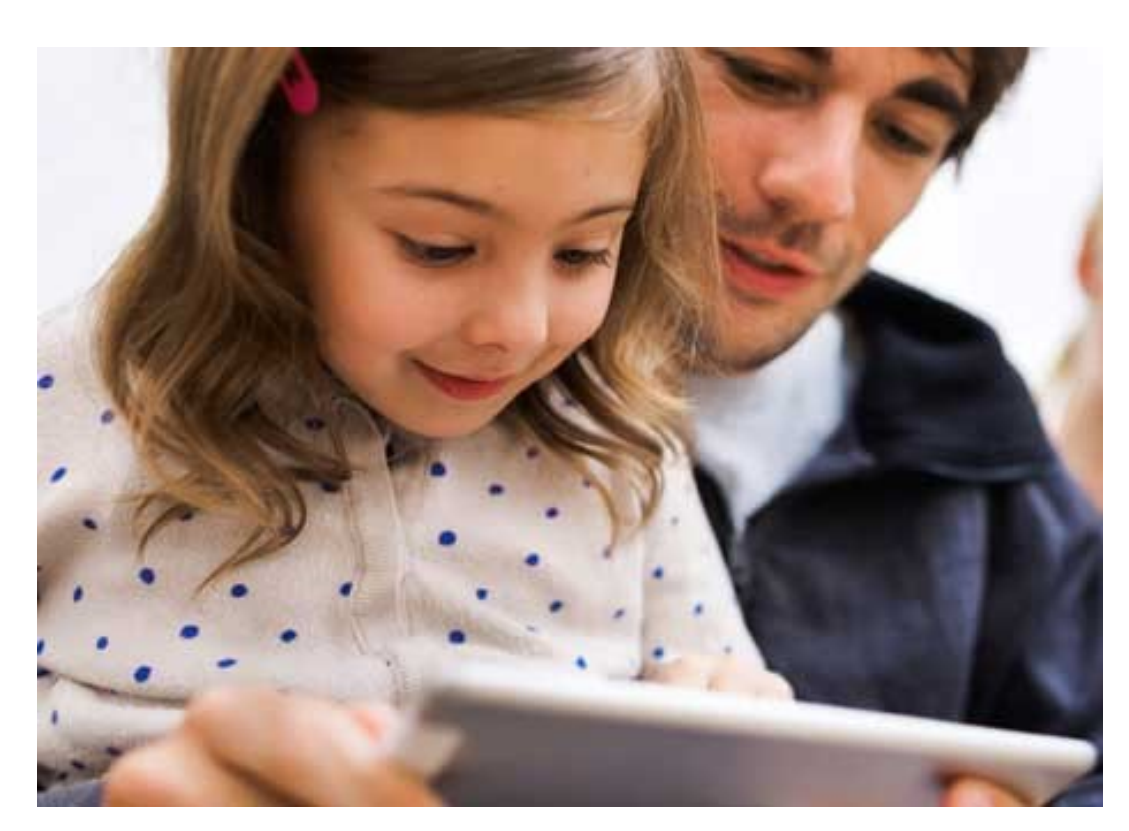
**Objective 3:** To **implement and evaluate the family-based program**, by conducting an intervention in Colorado with low-income families at increased risk for childhood obesity.

- In Year 5, a pilot randomized control trial will be conducted to test the efficacy of the intervention

## RESEARCH & EDUCATION OUTPUTS

### EDUCATION

- 16 students and trainees, including 4 undergraduate, 10 graduate and 2 post-doctoral fellows from 3 universities and 7 disciplines:
  - Nutrition, Public Health, Dietetics, Exercise Science, Anthropology, Child Development, Information Design



### PUBLICATIONS

- 6 papers, 14 abstracts
- Methods**  
Bellows, et al. (In Press). *J Nutr Educ Behav.*
- Family Mealtimes**  
Bekelman, et al. *Curr Nutr Rep.* 6.2 (2017):171-189.  
Bekelman, et al. *Under review at Social Science and Medicine.*
- Mobile Device Use**  
McCloskey, et al. *J Nutr Educ Behav.* 50.1 (2018): 83-89.  
McCloskey, et al. *Under Review at JMIR Formative Research.*  
Armstrong, et al. *Under Review at Interactive Digital Technologies and Young Children.*

