

Tracking the evidence base:

An annual review system for effective, promising, and emerging interventions



Presented by:

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Funding source:

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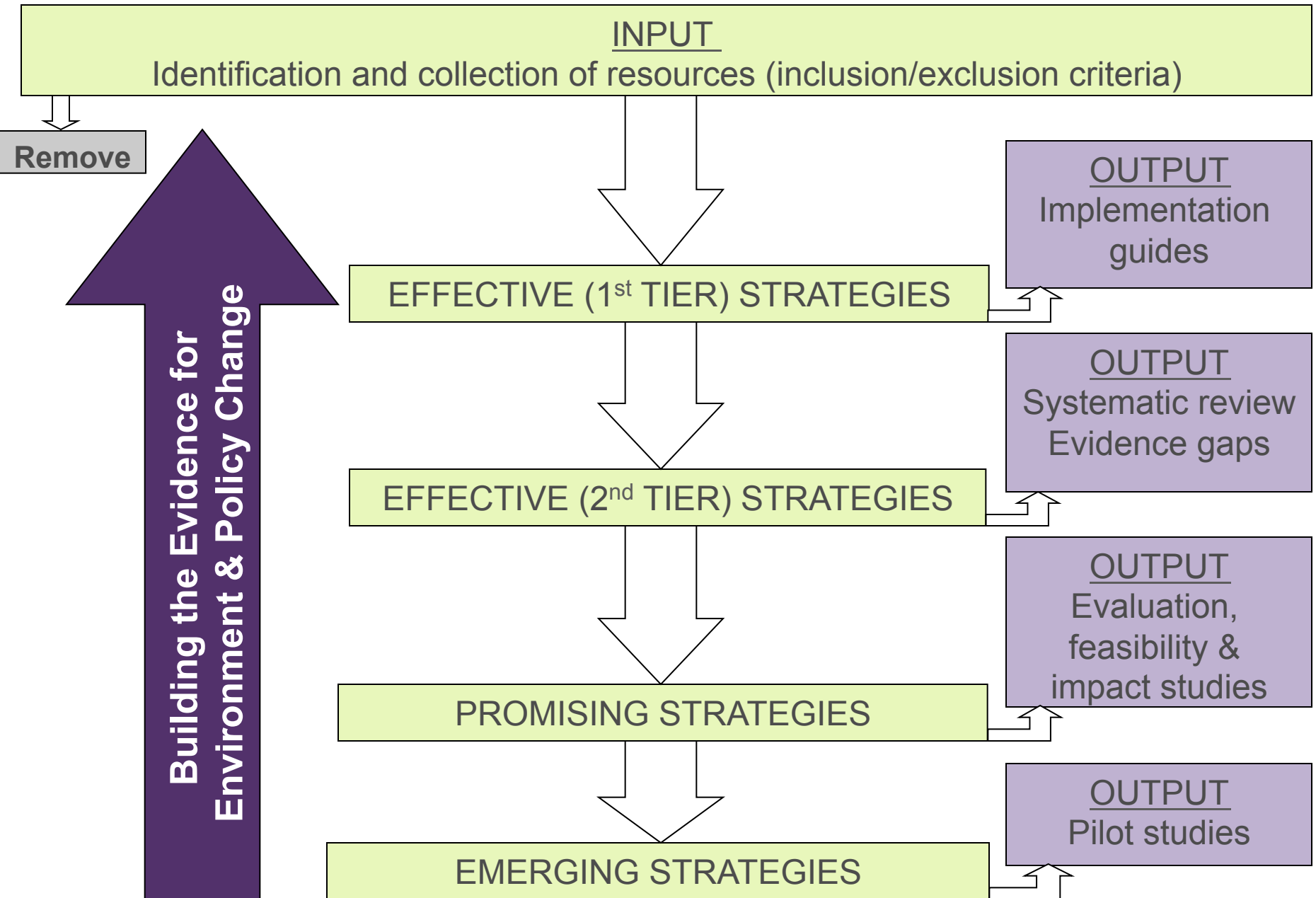
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Other Advisors

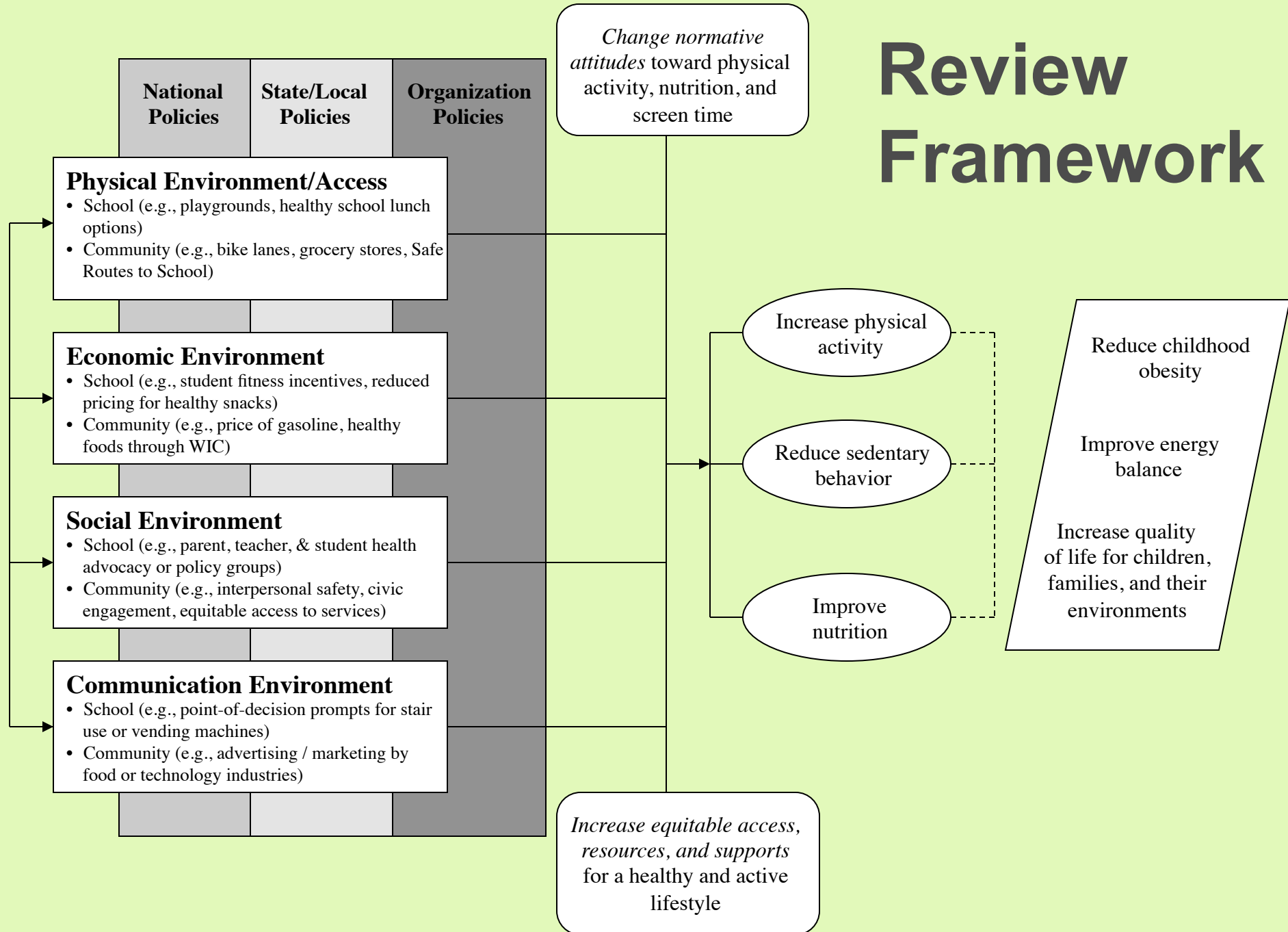
- Steve Farrar
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- James Krieger
- Jacqueline Martinez
- Meredith Reynolds
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- 1) To bridge research/evaluation and policy/practice efforts associated with *environmental and policy* nutrition and physical activity intervention strategies for childhood obesity prevention.
- 2) To accelerate the translation of replicable, *evidence-based* environment and policy interventions that will lead to leveling and eventually reducing rates of childhood obesity, especially in lower income and racial/ethnic populations.

Review Cycle



Review Framework



◀ Inventory

- 2,000+ resources

◀ Abstraction

- 588 articles from the peer-reviewed literature

◀ Analysis

- 405 studies in the summary

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/Sustainability	Impacts and Outcomes
United States						
Ward, Benjamin (2008); Benjamin, Ammerman (2007); Ammerman, Ward (2007) North Carolina	<p>Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC) program – Improvement of nutrition and physical activity policies and practices at child care centers and the overall center environment</p> <p>OTHER INTERVENTION COMPONENTS: Multi-component: 1. Physical activity components</p> <p>Complex: 1. Centers developed action plans to improve ≥ 3 target environmental changes. 2. Intervention centers decreased the sugary snacks and fried foods available, decreased access to the vending machine, increased fruit and vegetable servings, served reduced fat milk, and developed nutrition policies for the centers. Intervention centers increased access to spaces to be physically active, availability of equipment to assist in being physically active, and structured time for physical activity.</p>	<p>DESIGN: (Delayed) Group randomized trial DURATION: 6 months SAMPLE SIZE: 82 child-care centers (56 intervention, 26 control) in the intention-to-treat (ITT) analysis; 41 centers completed most/all of the intervention and were included in the as-per-protocol (APP) analysis. The sample also included 29 of 30 Child Care Health Consultants (CCHCs) (20 intervention, 10 delayed-intervention control)</p> <p>PRIMARY OUTCOME: Consumption of fruit, vegetables and reduced fat milk; physical activity</p> <p>MEASURES: 1. Nutrition and Physical Activity Self-Assessment for Child Care (current nutrition/physical activity policies and practices) 2. Environment and Policy Assessment and Observation (EPAO) – 75 items on nutrition/physical activity environments, policies, and practices</p> <p>DATA COLLECTION: The NAP SACC was completed at baseline and follow-up by the childcare center directors to identify current nutrition/physical activity policies and practices. The EPAO was administered in all centers before and after the intervention by trained observers (one-day observation of documents). Observers were trained by a 1-day workshop (review of EPAO, mock observation).</p> <p>LIMITATIONS: Insufficient consultant or staff time; self-selection may have led to the modest choice of items for change; one day of observation may have been inadequate to detect small changes</p>	<p>3-5 year olds 60% Non-White, 40% White (intervention) 65% Non-White, 35% White (control) ELIGIBILITY: The first 30 CCHCs with interest and working with ≥3 child-care centers meeting the eligibility requirements (enrollment of 20-150 children; participated in Child and Adult Care Food Program; a rating of 3-5 stars for quality child care; CCHC consent; no open case of abuse or neglect or serve only a special population) EXPOSURE/PARTICIPATION: 29 of the 77 eligible CHCCs participated in the intervention (38%). 41 of the 82 child-care centers completed most or all of the intervention.</p>	<p>LEAD AGENCY: Research team THEORY/Framework: Social cognitive theory EVIDENCE-BASED: The study builds off of a literature review and interviews conducted to identify the current science base surrounding physical activity and nutrition in the child care setting. REPLICATION/ADAPTATION: Not reported ADOPTION: Not reported IMPLEMENTATION: The research team trained the CCHCs, distributed tool kits, and administered the NAP SACC. CCHCs were randomly assigned to an in-person (n=10) 3-hour training or web-based (n=10) training. CCHCs conducted the continuing education workshops, helped child-care center directors develop an action plan, and provided ongoing technical assistance to the center directors. The child-care center directors were responsible for implementing all of the environmental and policy changes from their action plans. The advisory group provided insight on the appropriateness and usability of the intervention and materials. FORMATIVE EVALUATION: Literature review (documenting physical activity and nutrition standards in child care settings); 15 in-person and telephone interviews with child care providers; 3 parent focus groups; Pilot testing in 19 centers for feasibility and acceptability. PROCESS EVALUATION: Not reported</p>	<p>RESOURCES: 1. Resources for continuing education workshops 2. Funds for CCHC trainings 3. Collaborative action planning and technical assistance materials 4. NAP SACC tool kit</p> <p>FUNDING: Centers for Disease Control and Prevention; the North Carolina Department of Health and Human Services, Division of Public Health STRATEGIES: 9 additional states are using the NAP SACC program to address childhood overweight</p>	<p>HEALTHY EATING: 1. Intervention centers had an 11% improvement in the EPAO score regarding total nutrition from baseline to follow-up (in ITT analysis) and no change was observed in the control centers; non-significant, p=0.06. 2. There was a significant pre-post difference between intervention and control for total nutrition score (p=0.01) in the APP analysis (from 8.3, SD=1.4 to 9.6, SD=1.7 in the intervention group; from 9.0, SD=1.8 to 9.0, SD=1.7 in the control group). 3. For the individual-item analysis, intervention centers had a mean change score of +4.3 for nutrition items, compared to -0.5 change score for control (p<0.01).</p> <p>PHYSICAL ACTIVITY: 4. There was no significant difference between intervention and control groups for total physical activity score from baseline to follow-up in the ITT or the APP analysis. There was a positive change in the intervention group compared to a negative change in the control group (ITT: from 10.1, SD=2.4 to 10.9, SD=2.6 in the intervention group; from 11.0, SD=2.8 to 10.7, SD=1.8 in the control group) (APP: from 10.1, SD=2.4 to 11.1, SD=2.5 in the intervention group; from 11.0, SD=2.8 to 10.7, SD=1.8 in the control group). 5. For individual-item analysis, intervention centers had a mean change score of +3.6 for physical activity items, whereas control was -0.2 (p<0.05).</p>

Effectiveness Ratings for Childcare Food and Beverage Policies and Environments

Study Design	Intervention Duration	Outcomes	Effects	Effectiveness	Maintenance	Sampling/ Representation
10 studies		11 Outcomes	10 Effects 1 Association	10 Effectiveness ratings 1 Associational rating	10 studies	
30% Group randomized 10% Randomized 20% Non-randomized 30% Before and after 10% Cross-sectional	30% High 40% Moderate 20% Low 10% Not applicable	27% Obesity/overweight 73% Nutrition (One study removed because it only measured policy or environment change.)	70% Positive effects 10% Neutral effects 20% Negative effects 100% Positive associations (One study removed because it only measured policy or environment change.)	<i>Obesity/ overweight</i> (n = 3 ratings) 67% Effective 33% Somewhat effective 0% Not effective <i>Nutrition</i> (n = 7 ratings) 43% Effective 14% Somewhat effective 43% Not effective <i>Nutrition</i> (n = 1 rating) 100% Positive association 0% No association 0% Negative association (One study removed because it only measured policy or environment change.)	80% Not reported 10% Reported Positive changes made in dietary habits were maintained by the majority of children 6 months following the intervention. 10% Not applicable	10% High 90% Not reported

Impact Ratings for Childcare Food and Beverage Policies and Environments

Participation & Exposure	Representativeness	Reach	Impact	Implementation	Sustainability
9 studies (1 cross-sectional study excluded – no intervention evaluation)					
<u>Participation</u> 11% High 11% Low 78% Not reported	<u>High-risk populations</u> 67% High 33% Low <u>Representativeness</u> 56% High 0% Low 44% Not reported	<u>Population reach</u> 44% High 12% Low 44% Not reported <u>High-risk population reach</u> 33% High 11% Low 56% Not reported	<u>Population impact</u> <i>Healthy eating</i> 11% High impact 0% Low impact 0% No impact 89% Not reported <u>High-risk population impact</u> <i>Overweight/ obesity</i> 0% High impact 0% Low impact 10% No impact <i>Healthy eating</i> 10% High impact 0% Low impact 20% No impact 60% Not reported	<u>Components</u> 44% Multi-component 56% Single component, multiple activities 0% Single activity <u>Policy Feasibility</u> 100% High 0% Low <u>Intervention Feasibility</u> 78% High 22% Low <u>Complexity</u> 87% High 13% Low	33% Yes 0% No 67% Not reported

Associations: 1 study with a total of 11 associations (positive (n=7), negative (n=0), or not associated (n=4)).
 *No short-term outcomes reflected in the peer-reviewed literature.

Environment and Policy Indicators

Short-term Outcomes

Intermediate Outcomes

Long-term Outcomes

Increased Access to Healthy Foods
(e.g., increased fruit servings in after school snacks)

3 2 0

Decreased Access to Unhealthy Foods
(e.g., decreased sugared soft drinks and snacks available in preschools)

4 2 0

Higher Rates of Healthy Eating

Consumption of healthy foods
 3 2 0
 Consumption of unhealthy foods
 1 1 0
 Milk consumption
 3 1 0

Lower Rates of Overweight and Obesity
 (No Studies)

Key:
 Positive Association
 No Association
 Negative Association

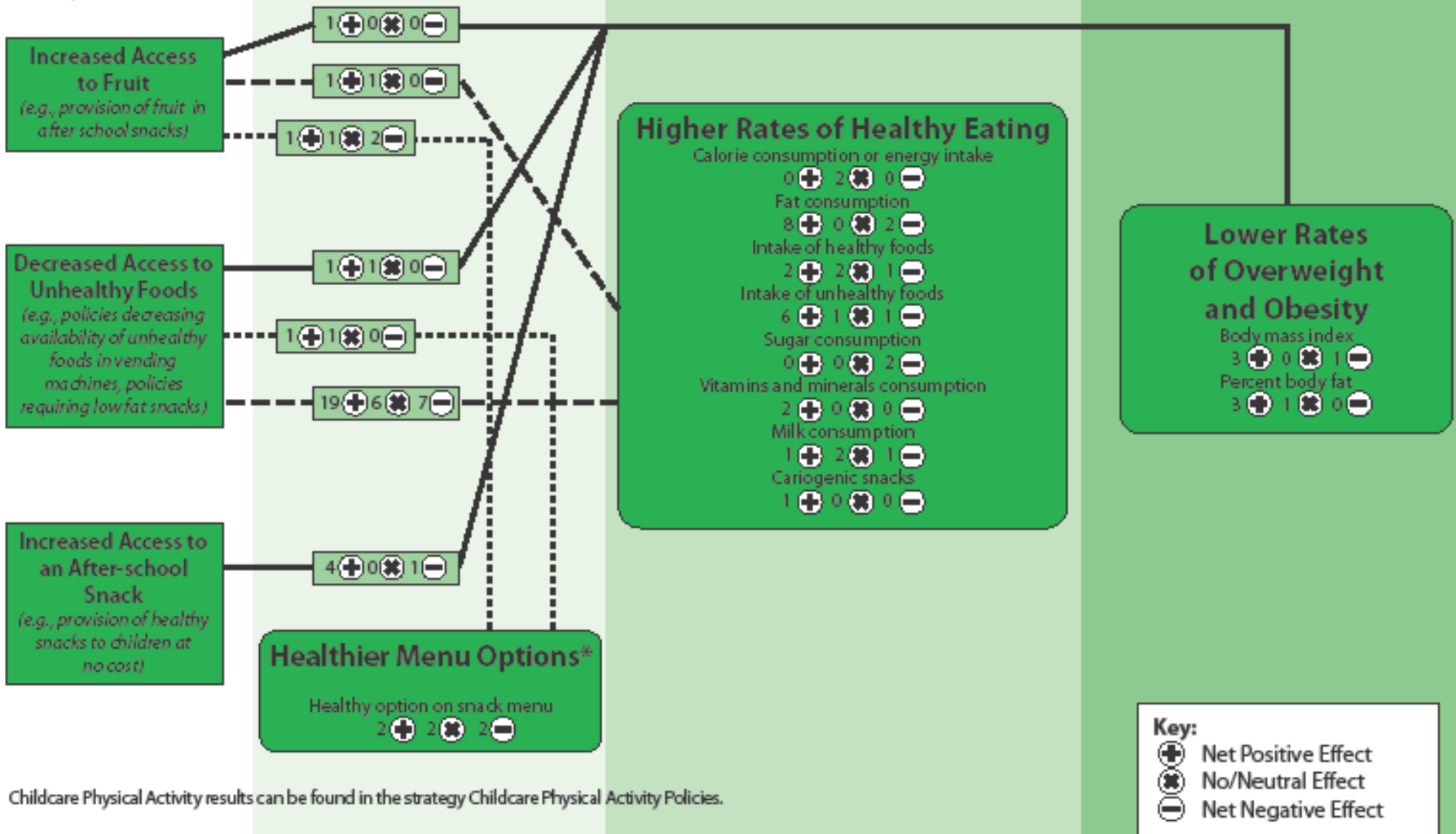
Interventions: 9 studies with a total of 48 effects (net positive (n=28), net negative (n=10), or neutral (n=10)). Two studies were conducted with lower-income participants and one with Native American participants. Multiple study designs were used for this strategy including group randomized, randomized, and non-randomized trials, and before and after studies.
 *Healthier menu options was included as a short-term proxy for healthy eating. No other short-term outcomes were reflected in the peer-reviewed literature.

Environment and Policy Indicators

Short-term Outcomes

Intermediate Outcomes

Long-term Outcomes



Childcare Physical Activity results can be found in the strategy Childcare Physical Activity Policies.

Nutrition Policy and Environment Strategy Ratings

Strategies	Community Guide Rating	1 st Tier Effective	2 nd Tier Effective	Promising	Emerging
Childcare Food and Beverage Policies			X		
School Food and Beverage Policies	Insufficient Evidence (<u>School-based programs promoting nutrition and physical activity</u>)		X		
Food Pricing			X		
Government Nutrition Assistance			X		
School Wellness Policies				X	
School and Community Gardens				X	
Menu Labeling					X
Neighborhood Availability of Food Stores					X
Neighborhood Availability of Restaurants					X
Neighborhood Availability of Food Stores and Restaurants					X
Provision of Free or Subscription Fruits and Vegetables at School					X
Provision of Drinking Water at School					X
Point of Purchase Prompts					X

Physical Activity Policy and Environment Strategy Ratings

Strategies	Community Guide Rating	1 st Tier Effective	2 nd Tier Effective	Promising	Emerging
Community Design	Recommended (<u>Community-scale urban design and land use policies</u>)	X			
School Physical Activity & Environment	Recommended (<u>Enhanced school-based physical education</u>)	X			
Street Design	Recommended (<u>Street-scale urban design and land use policies</u>)	X			
Availability of Parks and Recreation Facilities	Recommended (<u>Creation of or enhanced access to places for physical activity combined with informational outreach activities</u>)	X			
Point of Decision Prompts	Recommended (<u>Point-of-decision prompts to encourage use of stairs</u>)	X			
Transportation	Insufficient Evidence (<u>Transportation and travel policies and practices</u>)		X		
Childcare Physical Activity			X		
Safe Routes to School				X	
Traffic Safety				X	
Interpersonal Safety				X	
Screen Time	Policy and environmental strategies are not reviewed				X
School Wellness					X

Gaps

Implications

Reach

- Insufficient information is available for the:
 - social and cultural relevance of policies;
 - exposure of populations to policy and environmental changes; and
 - representativeness of intervention populations and evaluation samples.
- Develop new measures to assess the social and cultural relevance of interventions.
 - Develop standard measures to assess exposure (or participation) and representativeness.

Effectiveness

- Comparing the effectiveness of interventions relies on consistent reporting of outcomes.
- Encourage use of standard measures for outcomes (e.g., calories in, calories out).

Adoption

- Many factors influence policy decision-making and related appropriation of funds.
- Determine factors in the policy-making process that predict adoption.

Implementation

- Implementation fidelity is not adequately measured or reported.
 - Attributing behavioral and health effects to intervention strategies is unclear in multi-component and complex interventions.
 - Contextual conditions influencing implementation are rarely reported.
- Develop standard measures to assess implementation fidelity for interventions.
 - Use systems science approaches to understand pathways from policy/environmental changes to outcomes in different national, state, or local contexts.

Maintenance

- Maintenance of behavioral and health effects over time is not known.
 - The likelihood of sustaining policies and maintaining environments is not known.
- Develop long-term studies of policy and environmental changes and related outcomes.
 - Develop new measures to assess intervention sustainability.



Additional Resources

For more information:

Brennan L, Castro S, Brownson R, Claus J, Orleans T. Accelerating Evidence Reviews and Broadening Evidence Standards to Identify Effective, Promising, and Emerging Policy and Environmental Strategies for Prevention of Childhood Obesity. *Annu. Rev. Public Health* 2011. 32:25.1–25.

Stay tuned... high-level findings summary article (*Am J Prev Med*)

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The logo for Transtria features a stylized, abstract graphic on the left composed of several overlapping green and white shapes that form a large, irregular letter 'T'. To the right of this graphic, the word "transtria" is written in a lowercase, purple, cursive script font.

transtria

translate evidence
transfer skills
transform health

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