

# IMPACT AND EFFECTIVENESS

## TABLE 26

### **Child Care Food and Beverage Policies**

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# EFFECTIVENESS TABLES

Study Description	Measures & Outcomes	Effect Size or % Change	Effectiveness	Maintenance & Representativeness
<b>United States</b>				
<p><b>Author</b> Ward, Benjamin (2008); Benjamin, Ammerman (2007); Ammerman, Ward (2007)</p> <p>North Carolina</p> <p><b>Design</b> Intervention Evaluation (Delayed) Group randomized trial</p> <p><b>Duration</b> Medium 6 months</p>	<p><b>Measures</b> <i>Access to a Healthy School Environment</i> (increased availability of fruit, vegetables, and reduced fat milk, decreased availability of sugary snacks, fried foods, vending machines, increased availability of open spaces and structured time for physical activity)</p> <p><b>Outcome(s) Affected</b> Consumption of fruit, vegetables and reduced fat milk; physical activity (Environment and Policy Assessment and Observation - [EPAO])</p>	<p><b>Net Positive for Nutrition in Non-white Children (Child Care Food and Beverage Policies)</b></p> <p><b>Child Care Food and Beverage Policies</b></p> <p><u>NUTRITION:</u></p> <ol style="list-style-type: none"> <li>1. Intervention centers had an 11% improvement in the EPAO score regarding total nutrition from baseline to follow-up (in intention-to-treat [ITT] analysis) and no change was observed in the control centers; non-significant, (p=0.06).</li> <li>2. There was a significant pre-post difference between intervention and control for total nutrition score (p=0.01) in the as-per-protocol [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).</li> <li>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&lt;0.01).</li> </ol>	<p><b>Effective for Nutrition in Non-white Children</b></p> <p>Study design = Intervention evaluation</p> <p>Intervention duration = Medium</p> <p>Effect size = Net positive for nutrition in Non-white children</p>	<p><b>Maintenance</b> Not Reported</p> <p><b>Sampling / Representativeness</b> Not Reported</p>
<p><b>Author</b> Yin, Gutin (2008), Yin, Moore (2005), Gutin, Yin (2008), Wang, Gutin (2008), Yin, Hanes (2005), Georgia</p> <p><b>Design</b> Intervention evaluation Group randomized trial</p> <p><b>Duration</b> High 3 years</p>	<p><b>Measures</b> <i>Access to a Healthy Afterschool Environment</i> (afterschool access to a healthy snack and physical activity opportunities)</p> <p><b>Outcome(s) Affected</b> Overweight/obesity (height and weight [body mass index]) and after school moderate-to-vigorous physical activity (physical Activity Questionnaire for Children [PAQ-C] and physical Activity Enjoyment Scale [PACES])</p>	<p><b>Net Positive for Overweight/obesity in Lower-income, Racial and Ethnic Minority Children (Child Care Food and Beverage Policies)</b></p> <p><b>Child Care Food and Beverage Policies</b></p> <p><u>OVERWEIGHT/OBESITY:</u></p> <p><i>Year 1: Intervention subjects met the 40% inclusion criteria for analysis</i></p> <ol style="list-style-type: none"> <li>1. The intervention group (n=182) showed a relative reduction in percentage of body fat [%BF] (<math>\Delta = -0.76</math>, 95% CI; -1.42, -0.09, p=0.027 compared to the control (N=265)</li> <li>2. Intervention students had a greater decrease in %BF (mean(se)= 26.5±9.4 vs. 25.8±9.5) than the control subjects (n=265, mean(se)=26.9±9.7 vs. 26.8±9.7; p=0.027).</li> <li>3. As attendance declined in the after-school program, the changes seen in %BF ([n=44] &lt;20% attendance=0.18, p=0.38; (n=41) 20-39% = 0.56, p=0.39; (n=62) 40-59% = -0.23, p=0.34; (n=67) 60-79% = -0.83, p=0.34; (n=46) ≥80% = -0.93, p=0.39; F(1, 246) = 12.8, p=0.0004) and fat mass (&lt;20% attendance= 0.72, p=0.24; 20-39% = 0.98, p=0.24; 40-59% = 0.60, p=0.22; 60-79% = 0.33, p=0.21; ≥80% = 0.31, p=0.24; F(1, 246) = 5.9, p=0.016) decreased.</li> </ol> <p><i>Year 3:</i></p> <ol style="list-style-type: none"> <li>4. Over the six measurement points, the intervention group increased more than the control group in body mass index (p&lt;0.05).</li> </ol>	<p><b>Effective for Overweight/obesity in Lower-Income, Racial and Ethnic Minority Children (Study Population)</b></p> <p>Study design = Intervention evaluation</p> <p>Intervention duration = High</p> <p>Effect size = Net positive for overweight/obesity in lower-income, racial and ethnic minority children (study population)</p>	<p><b>Maintenance</b> Not Reported</p> <p><b>Sampling / Representativeness</b> Not Reported</p>

Study Description	Measures & Outcomes	Effect Size or % Change	Effectiveness	Maintenance & Representativeness
<p><b>Author</b> Barbeau, Johnson (2007)</p> <p>Georgia</p> <p><b>Design</b> Intervention Evaluation</p> <p>Randomized trial</p> <p><b>Duration</b> Medium</p> <p>10 months</p>	<p><b>Measures</b> <i>Access to a Healthy Afterschool Environment</i> (after school access to a healthy snack and physical activity opportunities)</p> <p><b>Outcome(s) Affected</b> Overweight/obesity (anthropometric data [body mass index, waist circumference, subscapular, triceps, and suprailiac skinfolds] and dual energy x-ray absorptiometry) and moderate-to-vigorous physical activity (cardiovascular fitness test and 7-day activity recall)</p>	<p><b>Net Positive for Overweight/obesity in African-American Females (Child Care Food and Beverage Policies)</b></p> <p><b>Child Care Food and Beverage Policies</b></p> <p><b>OVERWEIGHT/OBESITY:</b></p> <ol style="list-style-type: none"> <li>1. Compared with the control group, the intervention group had a relative decrease in adiposity, including %BF (body fat)(<math>\Delta = -2.01</math>, 95% CI: -2.98, -1.04, <math>p &lt; 0.0001</math>).</li> <li>2. Increased participation in the intervention was associated with greater decreases in %BF (partial <math>r^2 = 0.03</math>) and BMI (partial <math>r^2 = 0.05</math>).</li> <li>3. After accounting for heart rate and attendance, higher heart rates were associated with greater decreases in %BF (<math>\beta = -0.225</math>, <math>p &lt; 0.01</math>).</li> <li>4. The intervention group had smaller increases in subscapular (<math>p &lt; 0.01</math>), suprailiac (<math>p &lt; 0.05</math>), and triceps (<math>p &lt; 0.05</math>) skinfolds than the control group.</li> <li>5. Visceral adipose tissue of the intervention group increased substantially less than the control group (<math>\Delta = -14.6</math>, 95% CI: -24.2, -5.1, <math>p = 0.003</math>).</li> <li>6. Higher heart rate (HR) was associated with greater decreases in %BF (partial <math>r^2 = 0.11</math>) and fat mass (FM) (partial <math>r^2 = 0.07</math>).</li> </ol>	<p><b>Effective for Overweight/obesity in African-American Females</b></p> <p>Study design = Intervention evaluation</p> <p>Intervention duration = Medium</p> <p>Effect size = Net positive for overweight/obesity in African-American Females</p>	<p><b>Maintenance</b> Not Reported</p> <p><b>Sampling / Representativeness</b> Not Reported</p>
<p><b>Author</b> Kelder, Hoelscher (2005)</p> <p>Texas</p> <p><b>Design</b> Intervention evaluation</p> <p>Non-randomized trial</p> <p><b>Duration</b> Low</p> <p>5 months</p>	<p><b>Measures</b> <i>Access to a Healthy Afterschool Environment</i> (after school physical activity opportunities)</p> <p><b>Outcome(s) Affected</b> Physical activity (System for Observing Fitness Instruction Time [SOFIT]) and dietary intake (questionnaire)</p>	<p><b>Neutral for Nutrition in the Study Population (Child Care Food and Beverage Policies)</b></p> <p><b>Child Care Food and Beverage Policies</b></p> <p><b>NUTRITION:</b></p> <ol style="list-style-type: none"> <li>1. No significant effects on eating behavior were found (small sample size for ASSQ).</li> </ol>	<p><b>Not Effective for Nutrition in the Study Population</b></p> <p>Study design = Intervention evaluation</p> <p>Intervention duration = Low</p> <p>Effect size = Neutral for nutrition in the study population</p>	<p><b>Maintenance</b> Not Reported</p> <p><b>Sampling / Representativeness</b> Not Reported</p>

Study Description	Measures & Outcomes	Effect Size or % Change	Effectiveness	Maintenance & Representativeness
<p><b>Author</b> Williams, Squillace (1998); Williams, Strobino (2004); Williams, Bollella (2002); Bollella, Spark (1999); Bollella, Boccia (1999); Spark, Pfau (1998); D'Agostino, D'Andrea (1999); D'Agostino, D'Andrea (1999)</p> <p>New York</p> <p><b>Design</b> Intervention Evaluation</p> <p>Non-randomized trial</p> <p><b>Duration</b> High</p> <p>&gt;24 months</p>	<p><b>Measures</b> <i>Access to Healthy Foods</i> (policies requiring low-fat meals and snacks)</p> <p><b>Outcome(s) Affected</b> Nutrition of saturated and total fat (direct observation, 24 hour recall)</p>	<p><b>Net Positive for Nutrition in Lower-Income Children (Child Care Food and Beverage Policies)</b></p> <p><b>Child Care Food and Beverage Policies</b></p> <p><u>NUTRITION:</u></p> <ol style="list-style-type: none"> <li>Total energy intake increased in both groups (not significant), while caloric consumption increased in the intervention schools and decreased in control schools (not significant).</li> <li>Consumption of saturated fat from school meals decreased from 11.0%E (SD=4.7) to 8.0%E (SD=2.8) in intervention schools, compared with an increase from 10.2%E (SD=5.3) to 11.4%E (SD=5.7) for controls.</li> <li>Energy intake from total fat decreased from 29.2%E(SD=8.9) to 26.4%E (SD=7.9) in intervention schools, compared with an increase from 24.8%E (SD=11.1) to 29.1%E (SD=9.7).</li> <li>Differences in consumption between intervention and control from baseline to year 2 was significant for grams of saturated fat (mean change for intervention: 0.26, control: 2.82; p&lt;0.01), %E from total fat (intervention: -4.45, control: 6.47; p&lt;0.001) %E from saturated fat (intervention: -3.14, control: 2.01; p&lt;0.001), iron (intervention: 0.77, control: -0.76; p&lt;0.05) and magnesium (intervention: 18.73, control: 6.44; p&lt;0.05), with all changes favoring the intervention group.</li> <li>All-day children consumed less energy, protein, carbohydrate, total fat, calcium and magnesium than AM and PM children (data not shown)</li> </ol> <p><u>ENVIRONMENT CHANGE:</u></p> <ol style="list-style-type: none"> <li>Significant decrease in % of kcal from saturated fat in the intervention schools menus (12.5% energy [%E] to 8.0%E, p&lt;0.001) compared to controls (12.1%E to 11.6%E).</li> <li>% of kcal from total fat in the menus significantly decreased in intervention (31.0%E to 25.0%E, p&lt;0.01) compared to control (29.9%E to &gt;28.4%E).</li> </ol>	<p><b>Effective for Nutrition in Lower-Income Children (Study Population)</b></p> <p>Study design = Intervention evaluation</p> <p>Intervention duration = High</p> <p>Effect size = Net positive for nutrition in lower-income children (study population)</p>	<p><b>Maintenance</b> Not Reported</p> <p><b>Sampling / Representativeness</b> Not Reported</p>
<p><b>Author</b> Slawta, Bentley (2008)</p> <p>Oregon</p> <p><b>Design</b> Intervention Evaluation</p> <p>Before and after study</p> <p><b>Duration</b> Low</p> <p>12 weeks</p>	<p><b>Measures</b> <i>Access to a Healthy School Environment</i> (increased vegetables, fruits, whole grains, healthy fats and water, decreased saturated and mono-unsaturated fat, cheese, red meat, candy and soda, increased amount of time spent on cardiovascular fitness)</p> <p><b>Outcome(s) Affected</b> Overweight/obesity (health and weight [body mass index]), consumption of fruits, vegetables and whole grains (24 hour food log), and physical activity (mile run, sit-ups)</p>	<p><b>Net Positive for Overweight/obesity in the Study Population (Child Care Food and Beverage Policies)</b></p> <p><b>Net Positive for Nutrition in the Study Population (Child Care Food and Beverage Policies)</b></p> <p><b>Child Care Food and Beverage Policies</b></p> <p><u>OVERWEIGHT/OBESITY:</u></p> <ol style="list-style-type: none"> <li>Significant improvements were observed in all body composition measures. The mean BMI pre-intervention for students was 21 ± 5, and post-intervention was 20 ± 5 (p=0.0001).</li> </ol> <p><u>NUTRITION:</u></p> <ol style="list-style-type: none"> <li>Significant improvements were observed in some dietary habits from pre- to post-intervention: total fat (as % of total calories) – 33% to 26% (p=0.0001); saturated fat (as % of total calories) – 12% to 8% (p=0.0001); mono-unsaturated fat (as % of total calories) – 10% to 8% (p=0.009)</li> <li>More than 75% of children increased their intake of vegetables, fruits, whole grains, healthy fats, and water, as well as decreased their intake of cheese, red meat, candy, and soda (data not shown).</li> <li>All children who drank reduced fat or whole milk switched to low-fat milk, and a few who drank low-fat milk changed to non-fat milk (data not shown).</li> </ol>	<p><b>Somewhat Effective for Overweight/obesity in the Study Population</b></p> <p><b>Somewhat Effective for Nutrition in the Study Population</b></p> <p>Study design = Intervention evaluation</p> <p>Intervention duration = Low</p> <p>Effect size = Net positive for overweight/obesity and nutrition in the study population</p>	<p><b>Maintenance</b> 1. Positive changes made in dietary habits were maintained by the majority of children 6 months following the intervention (data not reported).</p> <p><b>Sampling / Representativeness</b> Not Reported</p>

Study Description	Measures & Outcomes	Effect Size or % Change	Effectiveness	Maintenance & Representativeness
<p><b>Author</b> Rinderknecht, Smith (2004) Minnesota</p> <p><b>Design</b> Intervention Evaluation Before and after study</p> <p><b>Duration</b> Medium 7 months</p>	<p><b>Measures</b> <i>Provision of Healthy Foods</i> (increased provision of fruits, vegetables, water and juice, decreased high-fat foods and soda)</p> <p><b>Outcome(s) Affected</b> Consumption of fat and sugar (24-hour recalls)</p>	<p><b>Net Negative for Nutrition in 11-18 year old Native-Americans (Child Care Food and Beverage Policies)</b></p> <p><b>Net Negative for Nutrition in 11-18 year old Native-American Boys (Child Care Food and Beverage Policies)</b></p> <p><b>Child Care Food and Beverage Policies</b></p> <p><u>NUTRITION:</u></p> <ol style="list-style-type: none"> <li>1. For 11-18 year old adolescents, a significant increase (<math>p=0.027</math>) in fat and sugar consumption was identified from baseline (mean 28.02: SD=28.27) to post intervention (mean 37.65, SD=28.7).</li> <li>2. Multiple comparisons showed that 11-18 year old boys significantly increased their intake of fat and sugar (<math>p&lt;0.006</math>): baseline (mean 22.90: SD=18.47) to post-intervention (mean 39.85, SD=22.45).</li> <li>3. Accurate data regarding dietary behaviors (from the 24 hour recalls) among 5-10 year olds was not available.</li> </ol>	<p><b>Not Effective for Nutrition in 11-18 year old Native Americans (Study Population)</b></p> <p><b>Not Effective for Nutrition in 11-18 year old Native American Boys (Study Population)</b></p> <p>Study design = Before and after study</p> <p>Intervention duration = Medium</p> <p>Effect size = Net negative for nutrition in 11-18 year old Native-Americans and 11-18 year old Native American boys (study population)</p>	<p><b>Maintenance</b> Not Reported</p> <p><b>Sampling / Representativeness</b> Not Reported</p>
<p><b>Author</b> Cassady, Vogt (2006) California</p> <p><b>Design</b> Intervention Evaluation Before and after study</p> <p><b>Duration</b> High 2 years</p>	<p><b>Measures</b> <i>Provision of Healthy Foods</i> (increased fruit and juice servings, decreased saturated high-fat snacks)</p> <p><b>Outcome(s) Affected</b> Menu offering of fruits and vegetables (direct observation)</p>	<p><b>Not Reported (for desired health outcomes)</b></p> <p><b>Child Care Food and Beverage Policies</b></p> <p><u>ENVIRONMENT CHANGE:</u></p> <ol style="list-style-type: none"> <li>1. Average fruit (juice and fresh fruit) servings on the snack menu increased by 83% from baseline to follow-up (<math>p&lt;0.05</math>).</li> <li>2. Grams of saturated fat on the snack menu decreased by an average of 42% from baseline to follow-up (not significant).</li> <li>3. There was no change in servings of vegetables on the snack menu.</li> <li>4. Milk declined from 0.29 average daily servings on the snack menu to 0. As a result, the new snack menu items contained significantly less calcium and Vitamin A. Calcium decreased by 67% (<math>p&lt;0.05</math>) from baseline to follow-up and vitamin A decreased by 79% (<math>p&lt;0.05</math>).</li> </ol>	<p><b>More Evidence Needed</b></p> <p>Study design = Before and after study</p> <p>Intervention duration = High</p> <p>Effect size = Not reported</p>	<p><b>Maintenance</b> Not Reported</p> <p><b>Sampling / Representativeness</b> Not Reported</p>

Study Description	Measures & Outcomes	Effect Size or % Change	Effectiveness	Maintenance & Representativeness
<b>International</b>				
<p><b>Author</b> Korwanich, Sheiham (2008) Thailand</p> <p><b>Design</b> Intervention Evaluation Group randomized trial</p> <p><b>Duration</b> Medium 9 months</p>	<p><b>Measures</b> <i>Access to Healthy Foods</i> (decreased access to cariogenic snacks, Thai desserts, crispy snacks and sugary drinks)</p> <p><b>Outcome(s) Affected</b> Consumption of cariogenic snacks, Thai desserts, crispy snacks and sugary drinks (direct observation)</p>	<p><b>Net Positive for Nutrition in the Study Population (Child Care Food and Beverage Policies)</b></p> <p><b>Child Care Food and Beverage Policies</b></p> <p><u>NUTRITION:</u></p> <ol style="list-style-type: none"> <li>There were significant differences between frequencies of cariogenic snack eating in both control and intervention schools from baseline to 9 month evaluation. Intake frequencies increased from <math>1.03 \pm 0.73</math> to <math>1.39 \pm 0.86</math> times per day in controls, but decreased from <math>1.12 \pm 0.79</math> to <math>0.84 \pm 0.58</math> times per day in the intervention group (<math>p &lt; 0.05</math>).</li> <li>At the 9 month evaluation, the mean frequencies of intake per day increased significantly in the control group for crispy snacks (<math>0.67 \pm 0.57</math> to <math>1.10 \pm 0.57</math>; <math>p &lt; 0.05</math>) and for non-sugar milk intake (<math>0.98 \pm 0.11</math> to <math>1.0 \pm 0.16</math>; <math>p &lt; 0.05</math>).</li> <li>Intake of desserts (from <math>0.23 \pm 0.40</math> to <math>0.13 \pm 0.20</math>) crispy snacks (from <math>0.91 \pm 0.77</math> to <math>0.68 \pm 0.44</math>), fresh fruits (from <math>0.10 \pm 0.20</math> to <math>0.07 \pm 0.17</math>) and sugary drinks (from <math>0.31 \pm 0.41</math> to <math>0.23 \pm 0.37</math>) decreased significantly in intervention schools from baseline to evaluation (<math>p &lt; 0.05</math>).</li> <li>Non-sugar milk frequencies were not significantly different between baseline and 9 month evaluation in the intervention group.</li> <li>At evaluation, mean daily intakes of fresh fruits, non sugar milk and sugary drinks in the control and intervention group were similar, except for cariogenic snacks and crispy snacks intake, which were significantly lower (<math>p &lt; 0.05</math>) in the intervention schools compared to control. However, the frequency of intake of Thai desserts was significantly higher in the intervention than in control schools.</li> </ol>	<p><b>Effective for Nutrition in the Study Population</b></p> <p>Study design = Intervention evaluation</p> <p>Intervention duration = Medium</p> <p>Effect size = Net positive for nutrition in the study population</p>	<p><b>Maintenance</b> Not Reported</p> <p><b>Sampling / Representativeness</b> Not Reported</p>
<p><b>Author</b> Vereecken, Huybrechts (2008); Huybrechts, Matthys (2008) Belgium</p> <p><b>Design</b> Association Cross-sectional study</p> <p><b>Duration</b> Not Applicable</p>	<p><b>Measures</b> <i>Access to Healthy Foods</i> (increased fruit, water and juice servings, decreased sugared soft drinks, snacks and sugared milk drinks)</p> <p><b>Outcome(s) Affected</b> Consumption of water, snacks, sugared soft drinks, milk, fruit juice, sugared milk drinks and fruit (parent completed food frequency questionnaire)</p>	<p><b>Positive Association for Nutrition in the Study Population (Child Care Food and Beverage Policies)</b></p> <p><b>(Assumption: Pre-school policies limiting unhealthy foods and beverages will lead to less access to unhealthy foods and beverages, which will lead to less consumption of unhealthy foods and beverages.)</b></p> <p><b>Child Care Food and Beverage Policies</b></p> <p><u>NUTRITION:</u></p> <ol style="list-style-type: none"> <li>Pre-school policies did not influence the consumption of water, snacks, sugared soft drinks and milk, while pre-school policies did influence the consumption of fruit juice, sugared milk drinks and fruit beyond individual characteristics of the children. However, the percentage of total variance attributable to schools was limited: 7.4% for fruit juice, 3.6% for sugared milk drinks and 4.4% for fruit.</li> <li>Food rules regarding snack consumption was associated with an increase in the consumption of fruit (<math>\Delta = 21</math>, standard error = 8; <math>p &lt; 0.05</math>).</li> <li>Availability of sugared milk drinks decreased the consumption of milk (<math>\Delta = -29</math>, standard error = 13; <math>p &lt; 0.05</math>) and increased the consumption of sugared milk drinks (<math>\Delta = 25</math>, standard error = 13; <math>p = 0.05</math>). Children in schools that provided sugared milk drinks during morning and afternoon breaks consumed more sugared milk drinks.</li> </ol>	<p><b>Positive Association for Nutrition in the Study Population</b></p> <p>Study design = Association</p> <p>Effect size = Positive association for nutrition in the study population</p>	<p><b>Maintenance</b> Not Reported</p> <p><b>Sampling / Representativeness</b> High</p> <p>Children in the study were demographically representative of the target population of Flemish pre-school children (statistical significance not reported).</p>

# IMPACT TABLES



Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<b>United States</b>						
<p><b>Author</b> Ward, Benjamin (2008); Benjamin, Ammerman (2007); Ammerman, Ward (2007) North Carolina</p>	<p><b>Participation/Potential Exposure</b> Participation = Not reported for children; 38% of the child care health consultants 29 of the 77 eligible child care health consultants participated in the intervention (38%). 41 of the 82 child-care centers included in the intervention completed most or all of the intervention. Exposure = Not reported <b>High-Risk Population</b> High 3-5 year olds, 60% Non-White, 40% White (intervention); 65% Non-White, 35% White (control)</p>	<p><b>Representative</b> Not Reported <b>Potential Population Reach</b> More Evidence Needed Participation = Not reported Exposure = Not reported Representativeness = Not reported <b>Potential High Risk Population Reach</b> More Evidence Needed High-risk population = High Representativeness = Not reported</p>	<p><b>Intervention Components</b> Complex 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 <b>COMPLEX:</b> 1. An advisory group was formed to help shape the overall direction of the intervention. 2. Centers received a tool kit (assessment tool, resource notebook, packet of handouts, 3 workshops for child care providers on CD with handouts, and a brochure for parents and caregivers). 3. Centers developed action plans to improve <math>\geq 3</math> target environmental changes. 4. Child care health consultants (CCHCs) delivered 3 continuing education workshops to staff as credits from the North Carolina licensing agency for child care. 5. Consultants provided ongoing targeted technical assistance. <b>Feasibility</b> Intervention Feasibility = Low Policy Feasibility = High Intervention activities: Changes to the nutrition and physical activity policies, establishment of an advisory group, toolkit, online workshops, parent/caregiver brochure, center action plans, in-person workshops, ongoing technical assistance Specialized expertise: Child care health consultants Resources needed: Resources for continuing education workshops, funds for child care health consultants trainings, collaborative action planning and technical assistance materials, NAP SACC tool kit Costs: Not reported <b>Implementation Complexity</b> High Intervention components = Complex Feasibility = High</p>	<p><b>Population Impact</b> More Evidence Needed Effectiveness = Not reported Potential population reach = More evidence needed Implementation complexity = High <b>High-risk Population Impact</b> More Evidence Needed Effectiveness = Effective for nutrition in non-white children Potential high-risk population reach = More evidence needed Implementation complexity = High <b>Sustainability</b> Yes 9 additional states are using the NAP SACC program to address childhood overweight</p>	<p><b>Child Care Physical Activity Policies</b> <u>PHYSICAL ACTIVITY:</u> 1. 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). 2. For individual-item analysis, intervention centers had a mean change score of +3.6 for physical activity items, whereas control was -0.2 (p&lt;0.05).</p>	<p>Not Reported</p>

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p><b>Author</b> Yin, Gutin (2005); Yin, Moore (2005); Gutin, Yin (2008); Wang, Gutin (2008); Yin, Hanes (2005) Georgia</p>	<p><b>Participation/Potential Exposure</b> Participation = Low 206 of 603 students (~33%) participated in at least 40% of the sessions. Exposure = High</p> <p>603 students were exposed to the intervention and 584 were exposed to the control.</p> <p><b>High-Risk Population</b> High 5-13 year olds 48% boys, 52% girls, 61% Black, 31% White, 1.5% Asian, 1.5% Hispanic, 5% Other, 68% eligible for free/reduced lunch (intervention sample) 64% African-American, 27% white, and 9% other racial backgrounds, 54% female, 8.7 years (sd=0.6 y) (evaluation sample)</p>	<p><b>Representative</b> High</p> <p><b>Potential Population Reach</b> Low Participation = Low Exposure = High Representativeness = High</p> <p><b>Potential High Risk Population Reach</b> High High-risk population = High Representativeness = High</p>	<p><b>Intervention Components</b> Multi-component FitKid afterschool policy including a healthy snack and physical activity</p> <p><b>MULTI-COMPONENT:</b> 1. Physical activity component (5 days/week for 3 school years for 120 minutes) with 80 minutes of moderate-to-vigorous physical activity (20 minute warm-up with skill instruction; 40 minutes moderate-to-vigorous physical activity; 20 minute cool-down with stretching)</p> <p><b>Feasibility</b> Intervention feasibility = Low Policy Feasibility = High</p> <p>Intervention activities: The physical activity program was developed by a team consisting of representatives of FitKid instructors, research staff, and exercise physiologists. The coordinator from the Richmond County Board of Education (RCBE) served as a liaison for RCBE and schools to facilitate project implementation, recruitment, and use of facilities. Researchers from MCG assisted with implementation. Control children received regular free "health screenings," accompanied by diet and physical activity information.</p> <p>Specialized expertise: FitKid instructors participated in 3 paid, mandatory staff meetings to discuss issues and learn about strategies, motivation, methods and exercise physiology.</p> <p>Resources needed: Healthy snacks, school buses, staff training manuals, staff wages, information letter from principal, student informational packet and prepaid envelope, physical activity and nutrition information (control), after-school program instructors, academic enrichment materials, FitKid t-shirts, sports equipment, after-school program hand-books, activity books</p> <p>Costs: Net intervention costs were estimated to be \$317 (\$956 minus \$639). Compared with control condition, students who attended at least 40% of the intervention reduced % body fat by 0.76% (95% CI, -1.42 to -0.09) at an additional cost of \$317 per student. The per capita program delivery was calculated as the total program cost divided by the number of students who attended at least 40% of the sessions (n=182) and was estimated to be \$956 during the 128 days of year 1.</p> <p><b>Implementation Complexity</b> Low Intervention components = Multi-component Feasibility = High</p>	<p><b>Population Impact</b> Low Impact for Overweight/obesity in the Study Population</p> <p>Effectiveness = Effective for overweight/obesity in the study population</p> <p>Potential population reach = Low</p> <p>Implementation complexity = Low</p> <p><b>High-risk Population Impact</b> High Impact for Overweight/obesity in Lower-income, Racial and Ethnic Minority Children</p> <p>Effectiveness = Effective for overweight/obesity in lower-income, racial and ethnic minority children</p> <p>Potential high-risk population reach = High</p> <p>Implementation complexity = Low</p> <p><b>Sustainability</b> Not Reported</p>	<p><b>Child Care Physical Activity Policies OVERWEIGHT/OBESITY:</b> <i>Year 1: Intervention subjects met the 40% inclusion criteria for analysis</i></p> <p>1. The intervention group (n=182) showed a relative reduction in percentage of body fat [%BF] (<math>\Delta = -0.76</math>, 95% CI; -1.42, -0.09, <math>p=0.027</math> compared to the control (N=265)</p> <p>2. Intervention students had a greater decrease in %BF (mean(se)= 26.5±9.4 vs. 25.8±9.5) than the control subjects (n=265, mean(se)=26.9±9.7 vs. 26.8±9.7; <math>p=0.027</math>).</p> <p>3. As attendance declined in the after-school program, the changes seen in %BF [(n=44) &lt;20% attendance=0.18, <math>p=0.38</math>; (n=41) 20-39% = 0.56, <math>p=0.39</math>; (n=62) 40-59% = -0.23, <math>p=0.34</math>; (n=67) 60-79% = -0.83, <math>p=0.34</math>; (n=46) ≥80% = -0.93, <math>p=0.39</math>; F(1,246) = 12.8, <math>p=0.0004</math>) and fat mass (&lt;20% attendance = 0.72, <math>p=0.24</math>; 20-39% = 0.98, <math>p=0.24</math>; 40-59% = 0.60, <math>p=0.22</math>; 60-79% = 0.33, <math>p=0.21</math>; ≥80% = 0.31, <math>p=0.24</math>; F(1,246) = 5.9, <math>p=0.016</math>) decreased.</p> <p><i>Year 3:</i></p> <p>4. Over the six measurement points, the intervention group increased more than the control group in body mass index (<math>p&lt;0.05</math>).</p> <p><b>PHYSICAL ACTIVITY:</b> <i>Year 3:</i></p> <p>5. As time was spent in physical activity, fitness increased in the FitKids population (<math>p&lt;0.01</math>).</p>	<p><i>Year 1: Intervention subjects met the 40% inclusion criteria for analysis</i></p> <p>1. The intervention group (n=182) showed a greater relative gain in bone mineral density (<math>\Delta = 0.008</math>, 95% CI; 0.001, 0.005, <math>p=0.023</math>) and a greater relative reduction in heart rate response to the step test (<math>\Delta = -4.4</math>, 95% CI; -8.2, 0.6, <math>p=0.025</math>) compared to the control (N=265)</p> <p>2. As attendance decreased in the after-school program, changes seen in heart rate response to the stepping test declined (&lt;20% attendance = -2.3, <math>p=0.2.5</math>; 20-39% = -1.7, <math>p=0.2.7</math>; 40-59% = -3.3, <math>p=2.4</math>; 60-79% = -7.8, <math>p=2.4</math>; ≥80% = -6.3, <math>p=2.7</math>; F(1,246) = 4.8, <math>p=0.029</math>).</p> <p>3. There was a marginally significant linear trend between program attendance and fat free mass [FFM] (<math>p=0.096</math>).</p> <p>4. Greater increases in bone mineral density [BMD] (<math>\Delta = 4.8</math>, <math>p=0.029</math>) were observed with higher program attendance.</p> <p>5. The relations between the changes in %BF (F(1,246) = 12.8, <math>p=0.0004</math>), BMD (F(1,246) = 4.8, <math>p=0.029</math>), cardiovascular fitness [CVF] (F(1,246) = 4.8, <math>p=0.029</math>) and attendance rate are also influenced by program attendance.</p> <p><i>Year 3:</i></p> <p>6. Over the six measurement points, the intervention group increased more than the control group in bone density (<math>p&lt;0.01</math>), fat-free soft tissue (<math>p&lt;0.01</math>), weight (<math>p&lt;0.01</math>), and height (<math>p&lt;0.01</math>).</p>

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p><b>Author</b> Barbeau, Johnson (2007) Georgia</p>	<p><b>Participation/Potential Exposure</b> Participation = Not reported Exposure = High 278 children attended after-school sessions</p> <p><b>High-Risk Population</b> High African-American, females, 8-12 years old (target sample)</p>	<p><b>Representative</b> Not Reported</p> <p><b>Potential Population Reach</b> More Evidence Needed Participation = Not reported Exposure = High Representativeness = Not reported</p> <p><b>Potential High Risk Population Reach</b> More Evidence Needed High-risk population = High Representativeness = Not reported</p>	<p><b>Intervention Components</b> Multi-component</p> <p>After school intervention providing a healthy snack and physical activity 5 days per week for 10 months including 80 minutes of physical activity (25 minutes skill development, 35 minutes moderate- to-vigorous physical activity, 20 minutes toning and stretching)</p> <p><b>MULTI-COMPONENT:</b> 1. Physical activity component</p> <p><b>COMPLEX:</b> 1. Parents and children attended information sessions. 2. Prizes given weekly for good behavior and attitude.</p> <p><b>Feasibility</b> Intervention feasibility = High Policy Feasibility = High</p> <p>Intervention activities: Teachers received formal training before the start of the intervention. The intervention was implemented by teachers and teaching assistants and at least one researcher attended all sessions. Each school was given a manual of procedures that included all the information necessary to implement the intervention, including a large number of potential activities. The control group received no intervention.</p> <p>Specialized expertise: Not reported</p> <p>Resources needed: Intervention manual, weekly prizes, healthy snacks, teachers and assistants to lead activities</p> <p>Costs: Not reported</p> <p><b>Implementation Complexity</b> High</p> <p>Intervention components = Multi-component Feasibility = High</p>	<p><b>Population Impact</b> More Evidence Needed Effectiveness = More Evidence Needed Potential population reach = More evidence needed Implementation complexity = High</p> <p><b>High-risk Population Impact</b> More Evidence Needed Effectiveness = Effective for overweight/obesity in African-American females Potential high-risk population reach = More evidence needed Implementation complexity = High</p> <p><b>Sustainability</b> Not Reported</p>	<p><b>Child Care Physical Activity Policies OVERWEIGHT/OBESITY:</b></p> <ol style="list-style-type: none"> <li>1. Compared with the control group, the intervention group had a relative decrease in adiposity, including %BF (body fat)(<math>\Delta = -2.01</math>, 95% CI: -2.98, -1.04, <math>p &lt; 0.0001</math>).</li> <li>2. Increased participation in the intervention was associated with greater decreases in %BF (partial <math>r^2 = 0.03</math>) and BMI (partial <math>r^2 = 0.05</math>).</li> <li>3. After accounting for heart rate and attendance, higher heart rates were associated with greater decreases in %BF (<math>\beta = -0.225</math>, <math>p &lt; 0.01</math>).</li> <li>4. The intervention group had smaller increases in subscapular (<math>p &lt; 0.01</math>), suprailiac (<math>p &lt; 0.05</math>), and triceps (<math>p &lt; 0.05</math>) skinfolds than the control group.</li> <li>5. Visceral adipose tissue of the intervention group increased substantially less than the control group (<math>\Delta = -14.6</math>, 95% CI: -24.2, -5.1, <math>p = 0.003</math>).</li> <li>6. Higher heart rate (HR) was associated with greater decreases in %BF (partial <math>r = 0.11</math>) and fat mass (FM) (partial <math>r^2 = 0.07</math>).</li> </ol> <p><b>PHYSICAL ACTIVITY:</b></p> <ol style="list-style-type: none"> <li>7. The intervention group had a relative increase in moderate physical activity (<math>\Delta = 0.21</math>, 95% CI: 0.07, 0.34, <math>p = 0.004</math>), vigorous physical activity (<math>\Delta = 0.15</math>, 95% CI: -0.01, 0.31, <math>p = 0.067</math>), and cardiovascular fitness (<math>\Delta = 1.57</math>, 95% CI: 0.22, 2.92, <math>p = 0.024</math>) compared to the control.</li> </ol>	<ol style="list-style-type: none"> <li>1. Compared with the control group, the intervention group had a relative increase in BMC (bone mineral content) (<math>\Delta = 0.044</math>, 95% CI: 0.024, 0.064), and BMD (bone mineral density) (<math>\Delta = 0.020</math>, 95% CI: .012, 0.027), <math>p &lt; 0.0001</math> for all variables.</li> <li>2. Increased participation was associated with greater increases in BMD (partial <math>r^2 = 0.03</math>).</li> <li>3. Higher heart rate (HR) was associated with greater increases in BMD (partial <math>r^2 = 0.04</math>) and fat free soft tissue (FFST) (partial <math>r^2 = 0.09</math>).</li> <li>4. After accounting for heart rate and attendance, higher HRs were associated with greater increases in BMD (<math>\beta = 0.001</math>, <math>p &lt; 0.05</math>) and attendance was only marginally associated (<math>\beta &lt; 0.001</math>, <math>p = 0.09</math>).</li> <li>5. When including only subjects who attended at least 40% of the sessions, the relative increase in CV fitness became non-significant.</li> </ol>

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p><b>Author</b> Kelder, Hoelscher (2005) Texas</p>	<p><b>Participation/Potential Exposure</b> Participation = Not reported Exposure = High Across 16 after-school programs, all children in grades 3-5 were invited to participate.</p> <p><b>High-Risk Population</b> Not Reported Mean age was 9 years, split among grades 3 (42%), 4 (36%) and 5 (22%), 43% White, 34% Hispanic, 17% African-American and 6% other ethnicity (evaluation sample)</p>	<p><b>Representative</b> Not Reported</p> <p><b>Potential Population Reach</b> More Evidence Needed Participation = Not reported Exposure = High Representativeness = Not reported</p> <p><b>Potential High Risk Population Reach</b> More Evidence Needed High-risk population = Not reported Representativeness = Not reported</p>	<p><b>Intervention Components</b> Multi-component CATCH Kids Club (CKC) – After school program requiring a snack component once a week that children helped to prepare and daily physical activity</p> <p><b>MULTI-COMPONENT:</b> 1. Physical activity component requiring at least 30 minutes of daily student physical activity (PA), with at least 40% of physical activity time spent in moderate-to-vigorous physical activity (MVPA).</p> <p><b>COMPLEX:</b> 1. Program implementers were given a CKC physical activity box with a variety of activities appropriate for children in grades K-5. 2. Education Component: 15 healthy eating and physical activity lessons (15-30 minutes each) divided into five 3 week units (5 modules). A program guide was developed to assist in lesson implementation. 3. Children discussed the snack’s taste and composition</p> <p><b>Feasibility</b> Intervention feasibility = High Policy Feasibility = High</p> <p>Intervention activities: 30 minutes of daily physical activity, fifteen 30 minute healthy eating and physical activity lessons, preparation of a healthy snack once per week, and activity boxes to conduct a variety of activities. After-school staff were trained prior to the intervention in two 4-hour sessions and booster trainings were held at each site mid-way through the intervention.</p> <p>Specialized expertise: Not reported</p> <p>Resources needed: Education lesson binder, physical activity boxes, resources for after-school staff training, resources for snack lessons, education program guide, physical education equipment</p> <p>Costs: Not reported</p> <p><b>Implementation Complexity</b> High Intervention components = Multi-component Feasibility =High</p>	<p><b>Population Impact</b> More Evidence Needed Effectiveness = Not effective for nutrition in the study population Potential population reach = More evidence needed Implementation complexity = High</p> <p><b>High-risk Population Impact</b> More Evidence Needed Effectiveness = More evidence needed Potential high-risk population reach = More evidence needed Implementation complexity = High</p> <p><b>Sustainability</b> Not Reported</p>	<p><b>Child Care Physical Activity Policies</b> <u>PHYSICAL ACTIVITY:</u> 1. The proportion of time on the playground engaged in MVPA increased among intervention children (27.38%) and decreased among control children (16.45%), net effect = 43.83%, p=0.001. 2. The overall time spent in MVPA at post-test was 56.8% at intervention sites and 31.3% at control sites (p=0.001). 3. A large and significant effect was observed for other/free play, where intervention schools reduced unstructured free time by 64 minutes (p=0.002) and increased game play by 30 minutes (marginally significant at p=0.10). 4. Large reductions in standing (-26% intervention effect, p=0.027) and sitting (-22% intervention effect, p=0.125) were observed.</p>	<p>Not Reported</p>

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p><b>Author</b> Williams, Squillace (1998); Williams, Strobino (2004); Williams, Bollella (2002); Bollella, Spark (1999); Bollella, Boccia (1999); Spark, Pfau (1998); D'Agostino, D'Andrea (1999); D'Agostino, D'Andrea (1999) New York</p>	<p><b>Participation/ Potential Exposure</b> Participation = Not Reported Exposure = High All children who were enrolled at the Head Start centers were exposed to the intervention.</p> <p><b>High-Risk Population</b> High 2-5 year olds, 100% lower-income (intervention) 42.6% non-Latino Black; 31.6% Latino; 22.9% non-Latino White; 1.4% Asian and 2.2% other ethnicities (evaluation sample)</p>	<p><b>Representative</b> High All enrolled children in the 9 centers were exposed.</p> <p><b>Potential Population Reach</b> High Exposure = High Participation = Not reported Representativeness = High</p> <p><b>Potential High Risk Population Reach</b> High High-risk population = High Representativeness = High</p>	<p><b>Intervention Components</b> Complex Healthy Start Intervention- Nutrition policies in Head Start Centers required a meal/ snack plans providing total fat level of <math>\leq 30\%</math> of total energy and a saturated fatty acid level of <math>\leq 10\%</math> of total energy over a 5-day period.</p> <p><b>COMPLEX:</b> 1. 15-minute nutrition education lessons, three times a week for 30 weeks (poems, stories, songs, games, creative play, role playing, explorative investigations, take home activities) 2. Parents received home activities, newsletters, health information; Parent meetings were held 3-4 times a year on health topics.</p> <p><b>Feasibility</b> Intervention Feasibility = High Policy Feasibility = High Intervention activities: Meal changes, nutrition education, parent home activities, parent newsletter, parent meetings Specialized expertise: Dietician; teacher (workshop) and food service staff (1 day, 6 hr) training sessions Resources required: Dietitians, teachers to implement curriculum, materials for education sessions (e.g., poems, games, stories), training materials, Healthy Start curriculum Costs: Not reported</p> <p><b>Implementation Complexity</b> High Intervention components = Complex Feasibility = High</p>	<p><b>Population Impact</b> High Impact for Nutrition in the Study Population Effectiveness = Effective for nutrition in the study population Potential population reach = High Implementation complexity = High</p> <p><b>High-risk Population Impact</b> High Impact for Nutrition in Lower-income Children Effectiveness for high-risk populations = Effective for nutrition in lower-income children Potential high-risk population reach = High Implementation complexity = High</p> <p><b>Sustainability</b> Not Reported</p>	Not Reported	1. A significant decrease was seen in total serum cholesterol in the intervention compared to controls (-6.0 vs. -0.4 mg/dL). The mean difference between the 2 groups was 5.6 (p<0.05).

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p><b>Author</b> Slawta, Bentley (2008) Oregon</p>	<p><b>Participation/Potential Exposure</b> Participation = Not Reported Exposure = Not Reported</p> <p><b>High-Risk Population</b> Not Reported (for intervention population) 6-12 year olds (evaluation sample)</p>	<p><b>Representative</b> Not Reported</p> <p><b>Potential Population Reach</b> More Evidence Needed Participation = Not reported Exposure = Not reported Representativeness = Not reported</p> <p><b>Potential High Risk Population Reach</b> More Evidence Needed High-risk population = Not reported Representativeness = Not reported</p>	<p><b>Intervention Components</b> Multi-component</p> <p>Be a Fit Kid – after school program designed to provide healthful foods and physical activity opportunities for children</p> <p><b>MULTI-COMPONENT:</b> 1. Physical activity component emphasized cardiovascular fitness</p> <p><b>COMPLEX:</b> 1. Nutrition component provided education on current dietary guidelines and sampling of fruits and vegetables, foods containing unsaturated fats and whole grains. 2. Field trips to supermarkets 3. Parent component: Initiation lecture was held prior to start of program covering nutrition and physical activity principles.</p> <p><b>Feasibility</b> Intervention Feasibility = High Policy Feasibility = High</p> <p>Intervention activities: Healthy foods, physical activity opportunities, nutrition education, fieldtrips to supermarkets, parent lecture</p> <p>Specialized expertise: Not reported</p> <p>Resources needed: Staff time, incentives (pancake mix, cereal, medals), donated foods, nutrition packets, raffle prizes</p> <p>Costs: Not reported</p> <p><b>Implementation Complexity</b> High Intervention components = Multi-component Feasibility = High</p>	<p><b>Population Impact</b> More Evidence Needed</p> <p>Effectiveness = Somewhat effective for overweight/obesity and nutrition in the study population</p> <p>Potential population reach = More evidence needed</p> <p>Implementation complexity = High</p> <p><b>High-risk Population Impact</b> More Evidence Needed</p> <p>Effectiveness for high-risk populations = Not reported</p> <p>Potential high-risk population reach = More evidence needed</p> <p>Implementation complexity = High</p> <p><b>Sustainability</b> Yes</p> <p>The program has since been established as a program within the non-profit organization Healthy Kids Now. It is currently included in the 4th grade curriculum of one southern Oregon school district.</p>	<p><b>Child Care Physical Activity Policies</b> <b>OVERWEIGHT/OBESITY:</b> 1. Significant improvements were observed in all body composition measures. The mean BMI pre-intervention for students was <math>21 \pm 5</math>, and post-intervention was <math>20 \pm 5</math> (<math>p &lt; 0.0001</math>).</p> <p><b>PHYSICAL ACTIVITY:</b> 2. Significant improvements were observed in all fitness measures from pre- to post-intervention: Mile-run – 13:33 minutes to 10:34 minutes (<math>p &lt; 0.0001</math>); Sit-ups – 23 to 30 (<math>p &lt; 0.0001</math>). At baseline, only 19% of the Be a Fit Kid sample children were able to meet the national averages for the mile run, which rose to 59% after the intervention.</p>	<p>1. There were significant reductions in high density lipoprotein cholesterol from pre- to post-intervention (from <math>1.2 \pm 0.1</math> to <math>1.2 \pm 0.3</math>, <math>p = 0.015</math>).</p>

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p><b>Author</b> Rinderknecht, Smith (2004) Minnesota</p>	<p><b>Participation/Potential Exposure</b> Participation = Not Reported Exposure = High All of the after-school participants were potentially exposed to the menu changes. 154 participants were exposed to at least some of the intervention classes (only 104 completed at least three quarters of the classes and the pre- and post-intervention surveys).</p> <p><b>High-Risk Population</b> High Urban, 100% Native American, 5-10 year olds, 11-18 year olds (intervention)</p>	<p><b>Representative</b> High Target population was Native American youth, and the intervention participants were all Native American youth ages 5-18.</p> <p><b>Potential Population Reach</b> High Exposure = High Participation = Not reported Representativeness = High</p> <p><b>Potential High Risk Population Reach</b> High High-risk population = High Representativeness = High</p>	<p><b>Intervention Components</b> Complex Modifications made to after school dinner menus (provide lower fat, higher fruit and vegetable meals; replace soda with water and juice)</p> <p><b>COMPLEX:</b> 1. Education curriculum: Lessons focused on promoting physical activity, choosing fruits instead of candy, drinking water or juice instead of soda, choosing low-fat foods and reviewing ways to stay in balance.</p> <p><b>Feasibility</b> Intervention Feasibility = High Policy Feasibility = High Intervention activities: School dinner modifications, nutrition education classes Specialized expertise: Researchers to teach the nutrition education classes Resources needed: Funds to make menu modifications, materials for education lessons, personnel to teach the lessons Costs: Not reported</p> <p><b>Implementation Complexity</b> High Intervention components = Complex Feasibility = High</p>	<p><b>Population Impact</b> No Impact for Nutrition in the Study Population No Impact for Nutrition for Boys Effectiveness = Not effective for nutrition in the study population Potential population reach = High Implementation complexity = High</p> <p><b>High-risk Population Impact</b> No Impact for Nutrition in 11-18 year old Native Americans No Impact for Nutrition in 11-18 year old Native American Boys Effectiveness = Not effective for nutrition in 11-18 year old Native Americans and 11-18 year old Native American Boys High-risk population reach = High Implementation complexity = High</p> <p><b>Sustainability</b> Not Reported</p>	Not Reported	<ol style="list-style-type: none"> <li>The 5-10 year old children reported a significant improvement in self-efficacy (for all children- mean at baseline: 2.09 ± 0.51, mean at post-intervention: 2.34 ± 0.41; p=0.002).</li> <li>Overweight 5-10 year olds significantly improved their self-efficacy (mean at baseline: 2.07 ± 0.54, mean at post-intervention: 2.37± 0.38; p=0.013), whereas no significant improvements were demonstrated by the youth at risk for overweight or normal weight youth.</li> <li>The nutrition intervention was not successful in significantly improving dietary self efficacy among adolescents, regardless of gender or BMI status.</li> </ol>

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p><b>Author</b> Cassady, Vogt (2006) California</p>	<p><b>Participation/Potential Exposure</b> Participation = Not Reported Exposure = High All children (~8,000) attending the START after-school program were exposed to the intervention.</p> <p><b>High-Risk Population</b> High Lower-income, 5-10 year olds 33% African American; 26% Hispanic; 25% Asian American; 14% White and 2% other race/ethnicity (START participant demographics) START is offered only at public elementary schools where a high proportion of families qualify for free or reduced-price school meals.</p>	<p><b>Representative</b> High Target population was lower-income, high-risk children, and the majority of intervention participants were lower-income and high-risk.</p> <p><b>Potential Population Reach</b> High Participation = Not reported Exposure = High Representativeness = High</p> <p><b>Potential High Risk Population</b> High High-risk population = High Representativeness = High</p>	<p><b>Intervention Components</b> Complex Students Today Achieving Results for Tomorrow (START) implemented a policy change to increase the number of servings of fruits and vegetables on after-school program snack menus</p> <p><b>COMPLEX:</b> 1. Children's 5 a Day – Power Play! Curriculum to teach children about increasing fruit and vegetable consumption</p> <p><b>Feasibility</b> Intervention Feasibility = High Policy Feasibility = High Intervention activities: Snack menu changes (increased amounts of fruits and vegetables), education classes Specialized expertise: Not reported Resources needed: Funds for additional fruits and vegetables, after-school staff, materials for education classes Costs: Not reported</p> <p><b>Implementation Complexity</b> High Intervention components = Complex Feasibility = High</p>	<p><b>Population Impact</b> More Evidence Needed Effectiveness = More evidence needed Potential population reach = High Implementation complexity = High</p> <p><b>High-risk Population Impact</b> More Evidence Needed Effectiveness = Not reported for high-risk populations Potential high-risk population reach = High Implementation complexity = High</p> <p><b>Sustainability</b> Yes START administrators were in the process of developing a plan to source fresh fruits and vegetables from local growers.</p>	<p>Not Reported</p>	<p>Not Reported</p>



Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<b>International</b>						
<p><b>Author</b> Korwanich, Sheiham (2008) Thailand</p>	<p><b>Participation/Potential Exposure</b> Participation = High  234 pre-school children from 16 schools received the intervention. Of the 234 children invited to participate in the study no one refused to participate.  Exposure = High  <b>High-Risk Population</b> Not Reported (for intervention population)  4-5 year olds</p>	<p><b>Representative</b> High  All children in the 16 schools were exposed.  <b>Potential Population Reach</b> High  Participation = 100%  Representativeness = High  <b>Potential High Risk Population Reach</b> More Evidence Needed  High-risk population = Not reported  Representativeness = High</p>	<p><b>Intervention Components</b> Complex  Nutritional guidelines on snacks and beverages in pre-schools  <u>COMPLEX:</u> 1. Encouraged nutrition education in school curriculum through songs, tales, etc. 2. School newsletters and village communications to inform parents, teachers and school board members about the policy  <b>Feasibility</b> Intervention Feasibility = High  Policy Feasibility = High  Intervention activities: Nutrition guidelines, nutrition education, school newsletters, village communications with parents  Specialized expertise: Not reported  Resources needed: Newsletters, media coverage and posters to promote the policy, materials for nutrition education, personnel to implement the school healthy eating policy and implement curriculum  Costs: Not reported  <b>Implementation Complexity</b> High  Intervention components = Complex  Feasibility = High</p>	<p><b>Population Impact</b> High Impact for Nutrition in the Study Population  Effectiveness = Effective for nutrition in the study population  Potential population reach = High  Implementation complexity = High  <b>High-risk Population Impact</b> More Evidence Needed  Effectiveness = Not reported for high-risk populations  Potential high-risk population reach = More evidence needed  Implementation complexity = High  <b>Sustainability</b> Not Reported</p>	Not Reported	Not Reported
<p><b>Author</b> Vereecken, Huybrechts (2008); Huybrechts, Matthys (2008) Belgium</p>	<p><b>Participation/Potential Exposure</b> Not Applicable  <b>High-Risk Population</b> Not Applicable  Only cross-sectional data provided.  2.5 - 6.5 year olds</p>	<p><b>Representative</b> Not Applicable  <b>Potential Population Reach</b> Not Applicable  <b>Potential High Risk Population Reach</b> Not Applicable</p>	<p><b>Intervention Components</b> Not Applicable  Only cross-sectional data provided.  Availability of pre-school food policies  <b>Feasibility</b> Not Applicable  <b>Implementation Complexity</b> Not Applicable</p>	<p><b>Population Impact</b> Not Applicable  <b>High-risk Population Impact</b> Not Applicable  <b>Sustainability</b> Not Applicable</p>	Not Reported	Not Reported