

IMPACT AND EFFECTIVENESS TABLE 40

Child Care Physical Activity Policies

Effectiveness Tables

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EFFECTIVENESS TABLES

Study Description	Measures & Outcomes	Effect Size or % Change	Effectiveness	Maintenance & Representativeness
United States				
<p>Author Barbeau, Johnson (2007)</p> <p>Georgia</p> <p>Design Intervention evaluation</p> <p>Randomized trial</p> <p>Duration Medium</p> <p>10 months</p>	<p>Measures <i>Access to a healthy afterschool environment</i> (after school physical activity opportunities and access to a healthy snack)</p> <p>Outcome(s) Affected Overweight/obesity (anthropometric data [body mass index, waist circumference, subscapular, triceps, and suprailliac skinfolds] and dual energy x-ray absorptiometry) and moderate-to-vigorous physical activity (cardiovascular fitness test and 7-day activity recall)</p>	<p>Net Positive for Overweight/obesity in African-American Females (Child Care Physical Activity Policies)</p> <p>Net Positive for Physical Activity in African-American Females (Child Care Physical Activity Policies)</p> <p>Child Care Physical Activity Policies</p> <p><u>OVERWEIGHT/OBESITY:</u></p> <ol style="list-style-type: none"> 1. Compared with the control group, the intervention group had a relative decrease in adiposity, including %BF (body fat)($\Delta = -2.01$, 95% CI: -2.98, -1.04, $p < 0.0001$). 2. Increased participation was associated with greater decreases in %BF (partial $r^2 = 0.03$) and BMI (partial $r^2 = 0.05$). 3. Higher heart rate (HR) was associated with greater decreases in %BF (partial $r^2 = 0.11$) and fat mass (FM) (partial $r^2 = 0.07$). 4. After accounting for heart rate and attendance, higher heart rates were associated with greater decreases in %BF ($b = -0.225$, $p < 0.01$). 5. The intervention group had smaller increases in subscapular ($p < 0.01$), suprailliac ($p < 0.05$), and triceps ($p < 0.05$) skinfolds than the control group. 6. Visceral adipose tissue of the intervention group increased substantially less than the control group ($\Delta = -14.6$, 95% CI: -24.2, -5.1, $p = 0.003$). <p><u>PHYSICAL ACTIVITY:</u></p> <ol style="list-style-type: none"> 7. The intervention group had a relative increase in moderate physical activity ($\Delta = 0.21$, 95% CI: 0.07, 0.34, $p = 0.004$), vigorous physical activity ($\Delta = 0.15$, 95% CI: -0.01, 0.31, $p = 0.067$), and cardiovascular fitness ($\Delta = 1.57$, 95% CI: 0.22, 2.92, $p = 0.024$) compared to the control. 	<p>Effective for Overweight/obesity in African-American Females</p> <p>Effective for Physical Activity in African-American Females</p> <p>Study design = Intervention evaluation</p> <p>Intervention duration = Medium</p> <p>Effect size = Net positive for overweight/obesity and physical activity in African-American Females</p>	<p>Maintenance Not Reported</p> <p>Sampling / Representativeness Not Reported</p>
<p>Author Yin, Gutin (2008), Yin, Moore (2005), Gutin, Yin (2008), Wang, Gutin (2008), Yin, Hanes (2005),</p> <p>Georgia</p> <p>Design Intervention evaluation</p> <p>Group randomized trial</p> <p>Duration High</p> <p>3 years</p>	<p>Measures <i>Access to a healthy afterschool environment</i> (afterschool physical activity opportunities and access to a healthy snack)</p> <p>Outcome(s) Affected 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>Net Positive for Overweight/obesity in Lower-Income, Racial and Ethnic Minority Children (Child Care Physical Activity Policies)</p> <p>Net Positive for Physical Activity in Lower-Income, Racial and Ethnic Minority Children (Child Care Physical Activity Policies)</p> <p>Child Care Physical Activity Policies</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"> 1. The intervention group ($n = 182$) showed a relative reduction in percentage of body fat [%BF] ($\Delta = -0.76$, 95% CI: -1.42, -0.09, $p = 0.027$) compared to the control ($N = 265$) 2. Intervention students had a greater decrease in %BF (mean(se) = 26.5\pm9.4 vs. 25.8\pm9.5) than the control subjects ($n = 265$, mean(se) = 26.9\pm9.7 vs. 26.8\pm9.7; $p = 0.027$). 3. As attendance declined in the after-school program, the changes seen in %BF ($[n = 44] < 20\%$ 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, $p = 0.34$; ($n = 46$) $\geq 80\%$ = -0.93, $p = 0.39$; $\Delta = 12.8$, $p = 0.0004$) and fat mass ($< 20\%$ attendance = 0.72, $p = 0.24$; 20-39% = 0.98, $p = 0.24$; 40-59% = 0.60, $p = 0.22$; 60-79% = 0.33, $p = 0.21$; $\geq 80\%$ = 0.31, $p = 0.24$; $\Delta = 5.9$, $p = 0.016$) decreased. <p><i>Year 3:</i></p> <ol style="list-style-type: none"> 4. Over the six measurement points, the intervention group increased more than the control group in body mass index ($p < 0.05$). <p><u>PHYSICAL ACTIVITY:</u></p> <p><i>Year 3:</i></p> <ol style="list-style-type: none"> 5. As time was spent in physical activity, fitness increased in the FitKids population ($p < 0.01$). 	<p>Effective for Overweight/obesity in Lower-Income, Racial and Ethnic Minority Children (Study Population)</p> <p>Effective for Physical Activity in Lower-Income, Racial and Ethnic Minority Children (Study Population)</p> <p>Study design = Intervention evaluation</p> <p>Intervention duration = High</p> <p>Effect size = Net positive for overweight/obesity and physical activity in lower-income, racial and ethnic minority children (study population)</p>	<p>Maintenance Not Reported</p> <p>Sampling / Representativeness Not Reported</p>

Study Description	Measures & Outcomes	Effect Size or % Change	Effectiveness	Maintenance & Representativeness
<p>Author Ward, Benjamin (2008); Benjamin, Ammerman (2007); Ammerman, Ward (2007) North Carolina</p> <p>Design Intervention evaluation Group randomized trial (delayed intervention)</p> <p>Duration Medium 6 months</p>	<p>Measures <i>Access to a healthy Child Care environment</i> (physical activity opportunities, dietary consumption)</p> <p>Outcome(s) Affected Physical activity and nutrition (Nutrition and Physical activity Self-Assessment for Child Care and Environment and Policy Assessment and Observation [EPAO])</p>	<p>Net Positive for Physical Activity in Non-White Children (Child Care Physical Activity Policies)</p> <p>Child Care Physical Activity Policies</p> <p><u>PHYSICAL ACTIVITY:</u></p> <ol style="list-style-type: none"> 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. 2. 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, p=0.19) (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, p=0.15). 3. For individual-item analysis using a mixed-model analysis revealed that intervention centers physical activity score increased (mean change score = 3.6), whereas the control group decreased (mean change score= -0.2) (p<0.05). 	<p>Effective for Physical Activity in Non-White Children</p> <p>Study design = Intervention evaluation Intervention duration = Medium Effect size = Net positive for physical activity in non-white children</p>	<p>Maintenance Not Reported</p> <p>Sampling / Representativeness Not Reported</p>
<p>Author Trost, Fees (2008) Kansas</p> <p>Design Intervention evaluation Non-randomized trial</p> <p>Duration Low 10 weeks</p>	<p>Measures <i>Access to a healthy preschool environment</i> (preschool physical activity opportunities)</p> <p>Outcome(s) Affected Moderate-to-vigorous physical activity [MVPA] (accelerometers, Observational System for Recording Activity in Preschoolers [OSRAP])</p>	<p>Net Positive for Physical Activity in the Study Population (Child Care Physical Activity Policies)</p> <p>Child Care Physical Activity Policies</p> <p><u>PHYSICAL ACTIVITY:</u></p> <ol style="list-style-type: none"> 1. For classroom and outdoor time combined, intervention preschoolers exhibited similar MVPA levels to controls, with the exception of weeks 7 and 8, during which intervention preschoolers exhibited significantly higher levels of MVPA (approx. 14.4 min vs. 12.5 min, p<0.05). 2. When only classroom time was examined, intervention preschoolers exhibited significantly higher levels of MVPA than controls during weeks 5 and 6 (approx. 10.3 min vs. 9 min) and weeks 7 and 8, (approx. 11.1 min vs. 9.1 min), p<0.05 for both. 3. Using logistic regression analyses for observational data, intervention preschoolers were significantly more likely than controls to exhibit MVPA during circle time (22.8% vs. 10.3%; OR=2.6, 95% CI: 2.2-3.0), free-choice time outdoors (78.3% vs. 71.7%; OR=1.4, 95% CI: 1.2-1.8), and free-choice time indoors (26.7% vs. 23.5%; OR=1.2, 95% CI: 1.1-1.3). 	<p>Somewhat Effective for Physical Activity in the Study Population</p> <p>Study design = Intervention evaluation Intervention duration = Low Effect size = Net positive for physical activity in the study population</p>	<p>Maintenance Not Reported</p> <p>Sampling / Representativeness Not Reported</p>

Study Description	Measures & Outcomes	Effect Size or % Change	Effectiveness	Maintenance & Representativeness
<p>Author Kelder, Hoelscher (2005) Texas</p> <p>Design Intervention evaluation Non-randomized trial</p> <p>Duration Low 5 months</p>	<p>Measures <i>Access to a healthy afterschool environment</i> (after school physical activity opportunities)</p> <p>Outcome(s) Affected Physical activity (System for Observing Fitness Instruction Time [SOFIT]) and dietary intake (questionnaire)</p>	<p>Net Positive for Physical Activity in the Study Population (Child Care Physical Activity Policies)</p> <p>Child Care Physical Activity Policies</p> <p><u>PHYSICAL ACTIVITY:</u></p> <ol style="list-style-type: none"> 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>Somewhat Effective for Physical Activity in the Study Population</p> <p>Study design = Intervention evaluation</p> <p>Intervention duration = Low</p> <p>Effect size = Net positive for physical activity in the study population</p>	<p>Maintenance Not Reported</p> <p>Sampling / Representativeness Not Reported</p>
<p>Author Wilson, Evans (2005) South Carolina</p> <p>Design Intervention evaluation Non-randomized trial</p> <p>Duration Low 4 weeks</p>	<p>Measures <i>Access to a healthy afterschool environment</i> (after school physical activity opportunities)</p> <p>Outcome(s) Affected Moderate-to-vigorous physical activity (accelerometers and questionnaires)</p>	<p>Net Positive for Physical Activity in the Study Population (Child Care Physical Activity Policies)</p> <p>Child Care Physical Activity Policies</p> <p><u>PHYSICAL ACTIVITY:</u></p> <ol style="list-style-type: none"> 1. Participants in the student-centered intervention showed a greater increase in time spent in moderate physical activity (MPA) [from 81.05 ± 34.41 min to 98.22 ± 27.22 min], moderate-to-vigorous physical activity (MVPA) [from 89.10 ± 40.31 min to 111.50 ± 29.69 min], and vigorous physical activity (VPA), [from 6.66 ± 4.99 min to 10.5 ± 15.74 min] than those in the comparison group (MPA from 89.95 ± 33.24 min to 73.77 ± 27.19 min; MVPA from 104.25 ± 41.35 min to 81.22 ± 30.45 min; VPA from 11.33 ± 34 min to 6.13 ± 5.4 min), p<0.01 for all; all results show unadjusted means. 2. Repeated measures analysis (controlling for sex and body mass index) showed that intervention students had a greater increase in time spent in MPA (adjusted means and standard errors= 99.36 ± 5.88 min vs. 72.63 ± 5.88 min), MVPA (113.94 ± 6.27 min vs. 78.78 ± 6.27 min) and VPA (11.33 ± 1.07 min vs. 5.31 ± 1.07min) than those in the comparison group, p<0.02 for all. 3. Analyses comparing accelerometer estimates of program versus non-program days showed that there were no significant differences in physical activity levels for MPA (101.47 ± 29.59 min vs. 93.52 ± 36.30min) or MVPA (118.30 ± 34.52 min vs. 101.65 ± 39.79 min). VPA (16.34 ± 14.42 min vs. 8.13 ± 5.49 min, p <0.02) was greater during program as compared to non-program days. 	<p>Somewhat Effective for Physical Activity in the Study Population</p> <p>Study design = Intervention evaluation</p> <p>Intervention duration = Low</p> <p>Effect size = Net positive for physical activity in the study population</p>	<p>Maintenance Not Reported</p> <p>Sampling / Representativeness Not Reported</p>

Study Description	Measures & Outcomes	Effect Size or % Change	Effectiveness	Maintenance & Representativeness
<p>Author Farley, Meriwether (2007), Farley, Meriwether (2008) Louisiana</p> <p>Design Intervention evaluation Non-randomized trial</p> <p>Duration High The intervention took place from May 2003 through April 2005 (23 months).</p>	<p>Measures <i>Access to a healthy afterschool environment</i> (availability of safe, supervised play areas)</p> <p>Outcome(s) Affected Non-school time physical activity (System for Observing Play and Leisure Activity in Youth [SOPLAY] and self-reported surveys) and Overweight/obesity (anthropometric measures [height and weight=body mass index])</p>	<p>Neutral for Overweight/obesity (BMI) in Lower-income, African-American Students (Child Care Physical Activity Policies)</p> <p>Net Positive for Physical Activity in Lower-income, African-American Students (Child Care Physical Activity Policies)</p> <p>Net Positive for Sedentary Behavior in Lower-income, African-American Students (Child Care Physical Activity Policies)</p> <p>Child Care Physical Activity Policies</p> <p><u>OVERWEIGHT/OBESITY:</u></p> <ol style="list-style-type: none"> 1. The mean BMI change increased 2.25 kg/m² in the intervention school and 2.39 kg/m² in the comparison school (p=0.68) (n=160). <p><u>PHYSICAL ACTIVITY:</u></p> <ol style="list-style-type: none"> 2. For all 8 quarters combined, researchers observed 30% more active children in the intervention neighborhood compared with the comparison neighborhood (50.4 vs. 38.7; p<0.001). 3. For the entire intervention period, 84% more children were outdoors and active in the intervention neighborhood and schoolyard combined than were in the comparison neighborhood (71.1 vs. 38.7, p<0.001). <p><u>SEDENTARY BEHAVIOR:</u></p> <ol style="list-style-type: none"> 4. From baseline to the 2 year follow-up, the percentage of children who reported watching television increased in the control school from 83% to 92% and decreased in the intervention school from 92% to 88% (p=0.018). The percentage who reported watching movies increased from 61% to 70% in the control school and decreased from 60% to 50% in the intervention school (p=0.004). The percentage who reported using video games increased from 55% to 61% in the control and decreased from 62% to 48% in the intervention school (p=0.001). 	<p>Not Effective for Overweight/obesity (BMI) in Lower-income, African-American Students</p> <p>Effective for Physical Activity in Lower-income, African-American Students</p> <p>Effective for Sedentary Behavior in Lower-income, African-American Students</p> <p>Study design = Intervention evaluation Intervention duration = High Effect size = Neutral for overweight/obesity and net positive for physical activity and sedentary behavior in lower-income, African-American students</p>	<p>Maintenance Not Reported</p> <p>Sampling / Representativeness Not Reported</p>
<p>Author Williams, Carter (2009) New Mexico</p> <p>Design Intervention evaluation Before and after study</p> <p>Duration Low 10 weeks</p>	<p>Measures <i>Access to a healthy preschool environment</i> (physical activity opportunities)</p> <p>Outcome(s) Affected Physical activity (teacher physical activity surveys and pedometers)</p>	<p>Net Positive for Physical Activity in the Study Population (Child Care Physical Activity Policies)</p> <p>Child Care Physical Activity Policies</p> <p><u>PHYSICAL ACTIVITY:</u></p> <ol style="list-style-type: none"> 1. Baseline mean step count for teachers (n=19) was 6,165 (standard deviation [SD]= 1,029) and was not significantly different from the subsequent 10-week mean step count of 6,549 (SD= 983). 2. There was a significant increase in the number of days per week teachers (n=17) reported participating in the 4 types of physical activity (sports, stretching, toning and walking/biking) from 2.2 days per week of physical activity at baseline to 3.3 days per week at follow-up (p=0.003). <p><u>POLICY CHANGE:</u></p> <ol style="list-style-type: none"> 3. The average amount of time pre-school students (n=270) spent per week engaged in structured physical activity was 47 minutes (program goal was 50 minutes). 4. The program was implemented an average of 4.12 times per classroom per week; the mean total for the 10 weeks was 41.25 physical activities per classroom. 	<p>Somewhat Effective for Physical Activity in the Study Population</p> <p>Study design = Intervention evaluation Intervention duration = Low Effect size = Net positive for physical activity in the study population</p>	<p>Maintenance Not Reported</p> <p>Sampling / Representativeness Not Reported</p>

Study Description	Measures & Outcomes	Effect Size or % Change	Effectiveness	Maintenance & Representativeness
<p>Author Slawta, Bentley (2008) Oregon</p> <p>Design Intervention evaluation Before and after study</p> <p>Duration Low 3 months</p>	<p>Measures <i>Access to a healthy afterschool environment</i> (physical activity opportunities, dietary consumption)</p> <p>Outcome(s) Affected Overweight/obesity (body mass index [height and weight]), physical activity (PA) (timed mile run and number of sit-ups in 60 seconds), and nutrition (nutrition test, 24-hour food log filled out by parents, parental questionnaire)</p>	<p>Net Positive for Overweight/obesity in the Study Population (Child Care Physical Activity Policies)</p> <p>Net Positive for Physical Activity in the Study Population (Child Care Physical Activity Policies)</p> <p>Child Care Physical Activity Policies</p> <p><u>OVERWEIGHT/OBESITY:</u></p> <ol style="list-style-type: none"> By using a t-test, significant improvements were observed in body composition measures. BMI for students pre-intervention was 21 ± 5 (SD), and post-intervention was 20 ± 5 (SD), p<0.0001). <p><u>PHYSICAL ACTIVITY:</u></p> <ol style="list-style-type: none"> By using a t-test, significant improvements were observed in all fitness measures from pre- to post-intervention: (Mile-run: pre= 13:33 minutes to post = 10:34 minutes [p<0.0001]; Sit-ups: pre= 23 to post= 30 [p<0.0001]). 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 (no statistics given). 	<p>Somewhat Effective for Overweight/obesity in the Study Population</p> <p>Somewhat Effective for Physical Activity in the Study Population</p> <p>Study design = Intervention evaluation</p> <p>Intervention duration = Low</p> <p>Effect size = Net positive for overweight/obesity and physical activity in the study population</p>	<p>Maintenance</p> <ol style="list-style-type: none"> Positive changes made in dietary habits were maintained by the majority of children 6 months following the intervention (data not reported). <p>Sampling / Representativeness Not Reported</p>
<p>Author Dowda, Pate (2004), South Carolina</p> <p>Design Association Cross-sectional study</p> <p>Duration Not Applicable</p>	<p>Measures <i>Access to a healthy preschool environment</i> (physical activity opportunities)</p> <p>Outcome(s) Affected Moderate-to-vigorous physical activity (Observation System for Recording Activity in Preschools [OSRAP]) and overweight/obesity (height and weight [body mass index])</p>	<p>Positive Association for Physical Activity in the Study Population (Child Care Physical Activity Policies)</p> <p>Positive Association for Sedentary Behavior in the Study Population (Child Care Physical Activity Policies)</p> <p>(Assumptions: The presence of preschool policies and characteristics [3 or more field trips per month, community organization visits, electronic media use ≤45 min/day, ≥45 minutes/day of time spent outside, ≥50% of teachers with a college degree, ≥120 minutes/day of free-time physical activity opportunities, ≥ 90 minutes/day of outside physical activity, ≤ 17 children per classroom, preschool quality score] will increase physical activity and decrease sedentary behaviors.)</p> <p>Child Care Physical Activity Policies</p> <p><u>PHYSICAL ACTIVITY:</u></p> <ol style="list-style-type: none"> (N=266) Children in preschools reporting four or more physical activity-related field trips per month spent significantly more time in moderate to vigorous physical activity (MVPA) than children in preschools that participated in fewer trips (mean[standard error]=7.8[0.8] vs. 4.3[0.6], p=0.01). (N=264) Preschools with smaller classes spent more time in moderate-to-vigorous activity than preschools with larger class size, the difference was marginally significant (mean [standard error]=7.1[1.0] vs. 4.5[0.7], p=0.07). <p><u>SEDENTARY BEHAVIOR:</u></p> <ol style="list-style-type: none"> (N=266) Children in preschools with overall higher quality scores spent significantly less time in sedentary activity than did children attending lower quality preschools (mean [standard error] 54.7[2.6] vs. 63.3[2.4], p=0.04). The number of monthly field trips, involvement with community organizations, television/computer time, time spent outdoors, amount of free time, and class size were not associated with sedentary activity either overall or when children were on the playground. 	<p>Positive Association for Physical Activity in the Study Population</p> <p>Positive Association for Sedentary Behavior in the Study Population</p> <p>Study design = Association</p> <p>Effect size = Positive association for physical activity and sedentary behavior in the study population</p>	<p>Maintenance Not Applicable</p> <p>Sampling / Representativeness Not Reported</p>

Study Description	Measures & Outcomes	Effect Size or % Change	Effectiveness	Maintenance & Representativeness
<p>Author Dowda, Brown (2009) South Carolina</p> <p>Design Association Cross-sectional study</p> <p>Duration Not Applicable</p>	<p>Measures <i>Access to a healthy preschool environment</i> (physical activity opportunities)</p> <p>Outcome(s) Affected Physical activity and sedentary behavior (Observational System for Recording Physical Activity in Children) and preschool quality (Early Childhood Environment Rating Scale-revised [ECERS-R], director interview)</p>	<p>Positive Association for Physical Activity in the Study Population (Child Care Physical Activity Policies)</p> <p>Positive Association for Sedentary Behavior in the Study Population (Child Care Physical Activity Policies)</p> <p>(Assumptions: The presence of preschool policies and characteristics [use of field trips, visits to community organizations, physical activity led by trained teachers with a higher level of education, increased time outside and opportunities for physical activity and opportunities, the presence of fixed and portable equipment, decreased electronic media use, decreased children per classroom and increased classroom size] will increase physical activity and decrease sedentary behaviors.)</p> <p>Child Care Physical Activity Policies</p> <p><u>PHYSICAL ACTIVITY:</u></p> <ol style="list-style-type: none"> 1. Compared to NPA (not promoting physical activity) schools, children had more moderate to vigorous physical activity (MVPA) per hour in PPA (promoting physical activity) preschools that had higher quality (ECERS-R scores of >5; 7.5±0.3 [PPA] vs. 6.2±0.4 [NPA]; p=.01); lower use of electronic media (7.3±0.3 vs. 5.9±0.6; p=.03); at least one piece of portable equipment on the playground (7.4±0.3 vs. 6.2±0.4; p=.03); less fixed playground equipment (7.6±0.3 vs. 6.4±0.4; p=.02); and larger playgrounds (7.3±0.3 vs. 6.0±0.5; p=.02). 2. Compared to NPA (not promoting physical activity) schools, the preschools with all 5 characteristics associated with physical activity had significantly more MVPA time (8.3±0.5 vs. 6.6±0.3; p<0.001). All 5 of the higher PPA preschools also had provided recent physical activity training for their teachers. <p><u>SEDENTARY BEHAVIOR:</u></p> <ol style="list-style-type: none"> 3. Compared to NPA schools, children in PPA schools had fewer sedentary minutes/ hour (ECERS-R scores of >5; mean ± standard error = 32.8±0.8 [PPA] vs. 36.1±1.1 [NPA]; p=.01); lower use of electronic media (33.4±0.8 vs. 36.7 ±1.5; p=.05); at least one piece of portable equipment on the playground (33.4±0.8 vs. 36.7 ±1.5; p=.05); less fixed playground equipment (32.2±0.8 vs. 35.8±0.9; p<.01); and larger playgrounds (29.9±1.0 vs. 35.2±0.6; p<.001). 4. Compared to NPA schools, the preschools with all 5 characteristics associated with physical activity (see above) had significantly less sedentary activity time (29.9±1.0 vs. 35.2±0.6). All 5 of the higher PPA preschools also had provided recent physical activity training for their teachers. 	<p>Positive Association for Physical Activity in the Study Population</p> <p>Positive Association for Sedentary Behavior in the Study Population</p> <p>Study design = Association</p> <p>Effect size = Positive association for physical activity and sedentary behavior in the study population</p>	<p>Maintenance Not Applicable</p> <p>Sampling / Representativeness Not Reported</p>
<p>Author Choy, McGurk (2008) Hawaii</p> <p>Design Descriptive Non-comparative study</p> <p>Duration Not Applicable</p>	<p>Measures <i>Access to a healthy afterschool environment</i> (joint use agreement, use of facilities)</p> <p>Outcome(s) Affected Program participation (surveys)</p> <p>No health or behavior outcome.</p>	<p>Not Reported (for desired health outcomes)</p> <p>Child Care Physical Activity Policies</p> <p><u>ENVIRONMENT CHANGE:</u></p> <ol style="list-style-type: none"> 1. Since the joint use agreement began, over 900 physical activity class sessions have been offered to participants. 	<p>More Evidence Needed</p> <p>Study design = Descriptive</p> <p>Effect size = Not reported</p>	<p>Maintenance Not Applicable</p> <p>Sampling / Representativeness High</p> <p>Farrington neighborhood: >46,000 residents, 46.7% Filipino, 15.6% foreign-born recent immigrants, \$14,634 per-capita income. Residents of the community have higher rates of unemployment, higher use of welfare and food stamp assistance, and lower levels of home ownership than all residents in the state. (intervention population)</p> <p>Most participants were female (66.5%), younger than 18 years (52.8%), Filipino (40.9%), and Farrington High School students (52.2%). (evaluation sample)</p>

Study Description	Measures & Outcomes	Effect Size or % Change	Effectiveness	Maintenance & Representativeness
International				
<p>Author Reilly, Kelly (2006)</p> <p>Scotland</p> <p>Design Intervention evaluation</p> <p>Group randomized trial</p> <p>Duration Medium</p> <p>24 weeks</p>	<p>Measures <i>Access to a healthy nursery school environment</i> (physical activity opportunities)</p> <p>Outcome(s) Affected Overweight/obesity (body mass index), physical activity, and sedentary behavior (accelerometers and the Fundamental movement assessment battery)</p>	<p>Neutral for Overweight/obesity in the Study Population (Child Care Physical Activity Policies)</p> <p>Net Positive for Physical Activity in the Study Population (Child Care Physical Activity Policies)</p> <p>Neutral for Sedentary Behavior in the Study Population (Child Care Physical Activity Policies)</p> <p>Child Care Physical Activity Policies</p> <p><u>OVERWEIGHT/OBESITY:</u></p> <p>1. Group (intervention vs. control, n=481) was not a predictor for body mass index at six months (intervention mean= 0.46 [standard deviation= 1.03], control mean=0.43 [standard deviation=1.08], p=0.87) or at 12 months (intervention mean= 0.41, [1.05], control mean= 0.43 [1.10], p=0.90) nor were any of the other fixed effects (age, time, group, sex, interaction) significant during either data collection.</p> <p><u>PHYSICAL ACTIVITY:</u></p> <p>2. Children in the intervention group had significantly higher performance in movement skills tests than control children at six month follow-up (intervention score=11.5 [2.3], control score=10.7 [2.5], 95% CI 0.3-1.3, p=0.0027; n=420) from baseline (intervention score=7.9 [2.6], control score= 7.7[2.7]). The average difference in improvement being 0.8 units (0.3 to 1.3 units)</p> <p>3. Group (intervention vs. control) was not significant for modeling log counts per minute (p=0.18) but was marginally significant for log percentage time in moderate or vigorous physical activity (the mean value being greater in the control nurseries by 0.1, 0.0 to 0.2, p=0.05).</p> <p><u>SEDENTARY BEHAVIOR:</u></p> <p>4. Group (intervention vs. control) was not significant for percentage of time spent sedentary (p=0.08) but was marginally significant for log percentage time in moderate or vigorous physical activity (the mean value being greater in the control nurseries by 0.1, 0.0 to 0.2, p=0.05).</p>	<p>Not Effective for Overweight/obesity in the Study Population</p> <p>Effective for Physical Activity in the Study Population</p> <p>Not Effective for Sedentary Behavior in the Study Population</p> <p>Study design = Intervention evaluation</p> <p>Intervention duration = Medium</p> <p>Effect size = Neutral for overweight/obesity in the study population, net positive for physical activity in the study population, and neutral for sedentary behavior in the study population</p>	<p>Maintenance Not Reported</p> <p>Sampling / Representativeness Not Reported</p>
<p>Author Cardon, Labarque (2009)</p> <p>Belgium</p> <p>Design Intervention evaluation</p> <p>Group randomized trial</p> <p>Duration Low</p> <p>Pre-testing was performed in November and December 2007. To avoid measuring only the novelty effect of the interventions, post-testing was not performed immediately but 4 to 6 weeks after the implementation of the intervention, in February and March 2008.</p>	<p>Measures <i>Access to a healthy preschool environment</i> (access to playground equipment and presence of markings at preschools)</p> <p>Outcome(s) Affected School time physical activity (accelerometers)</p>	<p>Neutral for Physical Activity in the Study Population (Child Care Physical Activity Policies)</p> <p>Child Care Physical Activity Policies</p> <p><u>PHYSICAL ACTIVITY:</u></p> <p>1. None of the interventions resulted in a significant increase or decrease in post-test activity engagement percentages or average activity levels.</p>	<p>Not Effective for Physical Activity in the Study Population</p> <p>Study design = Intervention evaluation</p> <p>Intervention duration = Low</p> <p>Effect size = Neutral for physical activity in the study population</p>	<p>Maintenance Not Reported</p> <p>Sampling / Representativeness Not Reported</p>

IMPACT TABLES

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
United States						
<p>Author Barbeau, Johnson (2007) Georgia</p>	<p>Participation/Potential Exposure Participation = Not reported Exposure = High 278 children attended after-school sessions</p> <p>High-Risk Population High African-American, females, 8-12 years old (target sample)</p>	<p>Representative Not Reported</p> <p>Potential Population Reach More Evidence Needed Participation = Not reported Exposure = High Representativeness = Not reported</p> <p>Potential High Risk Population Reach More Evidence Needed High-risk population = High Representativeness = Not reported</p>	<p>Intervention Components Multi-component After school 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>MULTI-COMPONENT: 1. Free healthy snack provided</p> <p>COMPLEX: 1. Parents and children attended information sessions 2. Prizes given weekly for good behavior and attitude</p> <p>Feasibility Intervention feasibility = High Policy component feasibility = High 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. Specialized expertise: Not reported Resources needed: Intervention manual, weekly prizes, healthy snacks, teachers and assistants to lead activities Costs: Not reported</p> <p>Implementation Complexity High Intervention components = Multi-component Feasibility = High</p>	<p>Population Impact More Evidence Needed Effectiveness (general population) = More Evidence Needed Potential population reach = More evidence needed Implementation complexity = High</p> <p>High-risk Population Impact More Evidence Needed Effectiveness = Effective for overweight/obesity and physical activity in African-American females Potential high-risk population reach = More evidence needed Implementation complexity = High</p> <p>Sustainability Not Reported</p>	<p>Child Care Food and Beverage Policies <u>OVERWEIGHT/OBESITY:</u> 1. Compared with the control group, the intervention group had a relative decrease in adiposity, including %BF (body fat) ($\Delta = -2.01$, 95% CI: -2.98, -1.04, $p < 0.0001$). 2. Increased participation in the intervention was associated with greater decreases in %BF (partial $r^2 = 0.03$) and BMI (partial $r^2 = 0.05$). 3. After accounting for heart rate and attendance, higher heart rates were associated with greater decreases in %BF ($b = -0.225$, $p < 0.01$). 4. The intervention group had smaller increases in subscapular ($p < 0.01$), suprailiac ($p < 0.05$), and triceps ($p < 0.05$) skinfolds than the control group. 5. Visceral adipose tissue of the intervention group increased substantially less than the control group ($\Delta = -14.6$, 95% CI: -24.2, -5.1, $p = 0.003$).</p>	<ol style="list-style-type: none"> 1. Compared with the control group, the intervention group had a relative increase in BMC (bone mineral content) ($\Delta = 0.044$, 95% CI: 0.024, 0.064), and BMD (bone mineral density) ($\Delta = 0.020$, 95% CI: .012, 0.027), $p < 0.0001$ for all variables. 2. Increased participation was associated with greater increases in BMD (partial $r^2 = 0.03$). 3. Higher heart rate (HR) was associated with greater increases in BMD (partial $r^2 = 0.04$) and fat free soft tissue (FFST) (partial $r^2 = 0.09$). 4. After accounting for heart rate and attendance, higher HRs were associated with greater increases in BMD ($B = 0.001$, $p < 0.05$) and attendance was only marginally associated ($B < 0.001$, $p = 0.09$). 5. When including only subjects who attended at least 40% of the sessions, the relative increase in CV fitness became non-significant.

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p>Author Yin, Gutin (2005), Yin, Moore (2005), Gutin, Yin (2008), Wang, Gutin (2008), Yin, Hanes (2005), Georgia</p>	<p>Participation/Potential Exposure Participation = Low 206 of 603 students (~33%) participated in at least 40% of the sessions. Exposure = High 603 students were exposed to the intervention and 584 were exposed to the control. High-Risk Population 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) (evaluation sample)</p>	<p>Representative High Potential Population Reach Low Participation = Low Exposure = High Representativeness = High Potential High Risk Population Reach High High-risk population = High Representativeness = High</p>	<p>Intervention Components Multi-component FitKid afterschool physical activity policy (5 days/week for 3 school years for 120 minutes) including 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) <u>MULTI-COMPONENT:</u> 1. Provision of a healthy snack Feasibility Intervention feasibility = High Policy component feasibility = High 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. Specialized expertise: FitKid instructors participated in 3 paid, mandatory staff meetings to discuss issues and learn about strategies, motivation, methods and exercise physiology. 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 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. Implementation Complexity Low Intervention components = Multi-component Feasibility = High</p>	<p>Population Impact Low Impact for Overweight/obesity in the Study Population Low Impact for Physical Activity in the Study Population Effectiveness = Effective for physical activity and overweight/obesity in the study population Potential population reach = Low Implementation complexity = Low High-risk Population Impact High Impact for Overweight/obesity in Lower-income, Racial and Ethnic Minority Children High Impact for Physical Activity in Lower-income, Racial and Ethnic Minority Children Effectiveness = Effective for physical activity and overweight/obesity in lower-income, racial and ethnic minority children Potential high-risk population reach = High Implementation complexity = Low Sustainability Not Reported</p>	<p>Child Care Food and Beverage Policies OVERWEIGHT/OBESITY: <i>Year 1: Intervention subjects met the 40% inclusion criteria for analysis</i> 1. The intervention group (n=182) showed a relative reduction in percentage of body fat [%BF] ($\Delta = -0.76$, 95% CI; -1.42, -0.09, $p=0.027$ compared to the control (N=265) 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; $p=0.027$). 3. As attendance declined in the after-school program, the changes seen in %BF ([n=44] <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, $p=0.39$; $\Delta = -12.8$, $p=0.0004$) and fat mass (<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, $p=0.24$; $\Delta = 5.9$, $p=0.016$) decreased. <i>Year 3:</i> 4. Over the six measurement points, the intervention group increased more than the control group in body mass index ($p<0.05$).</p>	<p><i>Year 1: Intervention subjects met the 40% inclusion criteria for analysis</i> 1. The intervention group (n=182) showed a greater relative gain in bone mineral density ($\Delta = 0.008$, 95% CI; 0.001, 0.005, $p=0.023$) and a greater relative reduction in heart rate response to the step test ($\Delta = -4.4$, 95% CI; -8.2, 0.6, $p=0.025$) compared to the control (N=265) 2. As attendance decreased in the after-school program, changes seen in heart rate response to the stepping test declined (<20% attendance = -2.3, $p=0.25$; 20-39% = -1.7, $p=0.27$; 40-59% = -3.3, $p=2.4$; 60-79% = -7.8, $p=2.4$; ≥80% = -6.3, $p=2.7$; $\Delta = 4.8$, $p=0.029$). 3. There was a marginally significant linear trend between program attendance and fat free mass [FFM] ($p=0.096$). 4. Greater increases in bone mineral density [BMD] ($\Delta = 4.8$, $p=0.029$) were observed with higher program attendance. 5. The relations between the changes in %BF ($\Delta = 12.8$, $p=0.0004$), BMD ($\Delta = 4.8$, $p=0.029$), cardiovascular fitness [CVF] ($\Delta = 4.8$, $p=0.029$) and attendance rate are also influenced by program attendance. <i>Year 3:</i> 6. Over the six measurement points, the intervention group increased more than the control group in bone density ($p<0.01$), fat-free soft tissue ($p<0.01$), weight ($p<0.01$), and height ($p<0.01$).</p>

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p>Author Ward, Benjamin (2008); Benjamin, Ammerman (2007); Ammerman, Ward (2007) North Carolina</p>	<p>Participation/ Potential Exposure Participation = Low 29 of 77 eligible CHCCs participated in the intervention (38%). 41 of 82 child care centers completed most or all of the intervention. Exposure = Not reported</p> <p>High-Risk Population High 3-5 year olds (target population) Intervention: 60% Non-White, 40% White Control: 65% Non-White, 35% White (intervention population)</p>	<p>Representative Not Reported</p> <p>Potential Population Reach More Evidence Needed Participation = Low Exposure = Not reported Representativeness = Not reported</p> <p>Potential High Risk Population Reach More Evidence Needed High-risk population = High Representativeness = Not reported</p>	<p>Intervention Components 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. <u>COMPLEX:</u> Centers developed action plans to improve ≥ 3 target environmental changes as a result of this study. 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. 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.</p> <p>Feasibility Intervention feasibility = Low Policy component feasibility = High Intervention activities: 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. CCHC's 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. Specialized expertise: Not reported Resources needed: funding to convert areas for physical activity, play-ground equipment (bikes, mats, slides, etc.), fruits and vegetables, reduced fat milk, resources for continuing education workshops, funds for CCHC trainings, collaborative action planning and technical assistance materials, NAP SACC tool kit Costs: Not reported</p> <p>Implementation Complexity High Intervention components = Complex Feasibility = High</p>	<p>Population Impact More Evidence Needed Effectiveness = Not reported Potential population reach = More evidence needed Implementation complexity = High</p> <p>High-risk Population Impact More Evidence Needed Effectiveness = Effective for physical activity in non-white children Potential high-risk population reach = More evidence needed Implementation complexity = High</p> <p>Sustainability Not Reported</p>	<p>Child Care Food and Beverage Policies NUTRITION: 1. Intervention centers had an 11% improvement in the EPAO score regarding total nutrition from baseline to follow-up (in ITT analysis) while no change was observed in the control centers, which was a significant difference (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 and 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>Not Reported</p>

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p>Author Trost, Fees (2008) Kansas</p>	<p>Participation/Potential Exposure Participation = Not reported Exposure = High The study was conducted in 2 classrooms licensed for 12 children with morning and afternoon class groups, with a total of 4 class groups.</p> <p>High-Risk Population Not Reported 3-5 year olds (target population)</p>	<p>Representative Not Reported</p> <p>Potential Population Reach More Evidence Needed Participation = Not reported Exposure = High Representativeness = Not reported</p> <p>Potential High Risk Population Reach More Evidence Needed High-risk population = Not reported Representativeness = Not reported</p>	<p>Intervention Components Simple School policy implementing a Move and Learn Curriculum which integrated physical activity (PA) into all aspects of the half-day preschool curriculum, including math, social studies, science, language arts and nutrition education.</p> <p>Feasibility Intervention feasibility = High Policy component feasibility = High Intervention activities: Teachers were required at a minimum to include 2 Move and Learn Curriculum activities lasting 10 minutes or longer in each 2.5-hour session. Activities were repeated several times throughout the week. Lead teachers selected activities adapted from Lets Move, Learn, and Have Fun! and Class Act programs developed by the Kansas Nutrition Network and Kansas State University Research and Extension. The research team trained the teachers and staff in a one group training session. Specialized expertise: Not reported Resources needed: Curriculum materials, resources for teacher and staff training, training video, and teachers and staff. Costs: Not reported</p> <p>Implementation Complexity Low Intervention components = Simple Feasibility = High</p>	<p>Population Impact More Evidence Needed Effectiveness = Somewhat effective for physical activity in the study population Potential population reach = More evidence needed Implementation complexity = Low</p> <p>High-risk Population Impact More Evidence Needed Effectiveness = More evidence needed Potential high-risk population reach = More evidence needed Implementation complexity = Low</p> <p>Sustainability Not Reported</p>	<p>Not Reported</p>	<p>Not Reported</p>

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p>Author Kelder, Hoelscher (2005) Texas</p>	<p>Participation/Potential Exposure Participation = Not reported Exposure = High Across 16 after-school programs, all children in grades 3-5 were invited to participate.</p> <p>High-Risk Population Not Reported</p> <p>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>Representative Not Reported</p> <p>Potential Population Reach More Evidence Needed</p> <p>Participation = Not reported Exposure = High</p> <p>Representativeness = Not reported</p> <p>Potential High Risk Population Reach More Evidence Needed</p> <p>High-risk population = Not reported</p> <p>Representativeness = Not reported</p>	<p>Intervention Components Multi-component</p> <p>CATCH Kids Club (CKC) – After school program requiring at least 30 minutes of daily student physical activity, with at least 40% of physical activity time spent in moderate-to-vigorous physical activity (MVPA).</p> <p>MULTI-COMPONENT: 1. Snack Component: once a week, children helped to prepare a healthful snack and discussed the snack’s taste and composition.</p> <p>COMPLEX: 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.</p> <p>Feasibility Intervention feasibility = High</p> <p>Policy component 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>Implementation Complexity High</p> <p>Intervention components = Multi-component</p> <p>Feasibility = High</p>	<p>Population Impact More Evidence Needed</p> <p>Effectiveness = Somewhat effective for physical activity in the study population</p> <p>Potential population reach = More evidence needed</p> <p>Implementation complexity = High</p> <p>High-risk Population Impact More Evidence Needed</p> <p>Effectiveness = More evidence needed</p> <p>Potential high-risk population reach = More evidence needed</p> <p>Implementation complexity = High</p> <p>Sustainability Not Reported</p>	<p>Child Care Food and Beverage Policies <u>NUTRITION:</u> 1. No significant effects on eating behavior were found (small sample size for ASSQ).</p>	<p>Not Reported</p> <p>1. No significant effects on eating behavior were found (small sample size for ASSQ).</p>

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p>Author Wilson, Evans (2005) South Carolina</p>	<p>Participation/Potential Exposure Participation = High 19 of the 24 participants (79%) missed none or only 1 day of the program, four students (17%) missed 2 or 3 days and only 1 student missed more than 3 days. Twenty-eight students were enrolled in the intervention program, with only 4 dropping out of the program (85% retention rate). Process data showed that students were engaged in physical activity for at least 50 min. Exposure = Low 28 students enrolled in grade 6 (11-14 years old) from 2 middle schools participated in the intervention.</p> <p>High-Risk Population Not reported Rural 11-14 year olds (target population) Intervention: 64% girls, 36% boys, 85% African-American, 89% free/reduced-price lunch Control: 85% girls, 15% boys, 80% African-American, 75% free/reduced-price lunch (evaluation sample)</p>	<p>Representative Not Reported A middle school in the community was selected as a comparison school matched on race, gender distribution, age, and proportion on free or reduced-price lunch.</p> <p>Potential Population Reach More Evidence Needed Participation = High Exposure = Low Representativeness = Not reported</p> <p>Potential High Risk Population Reach More Evidence Needed High-risk population = High Representativeness = Not reported</p>	<p>Intervention Components Multi-component After school physical activity (PA) intervention to increase moderate-to-vigorous physical activity to 60 minutes per day (2 hours per day, 3 days a week for 4 weeks) <u>MULTI-COMPONENT</u> 1. Snack (30 min) <u>COMPLEX</u> 1. Trained graduate students taught participants behavioral skills and motivation strategies to increase PA with friends and at home (30 min) 2. Strategic self-presentation videotape session to enhance motivation and self-concept for physical activity</p> <p>Feasibility Intervention feasibility = High Policy component feasibility = High Intervention activities: Three trained staff provided oversight for the intervention program, and two staff members, trained in physical education and injury prevention, provided structure for the physical activity elements of the program. Adolescents in the intervention took ownership in developing the program and selected a variety of physical activities to participate in. Trained graduate students assisted students with video interviews. The comparison school received 4 weeks of general health education during regular school hours that did not emphasize physical activity. Specialized expertise: Not reported Resources needed: Video camera, snacks, materials for physical activity sessions, trained graduate students and staff, funding for personnel Costs: Not reported</p> <p>Implementation Complexity High Intervention components = Multi-component Feasibility = High</p>	<p>Population Impact More Evidence Needed Effectiveness = Somewhat effective for physical activity in the study population Potential population reach = More evidence needed Implementation complexity = High</p> <p>High-risk Population Impact More Evidence Needed Effectiveness = Somewhat effective for physical activity in lower-income, African American students Potential high-risk population reach = More evidence needed Implementation complexity = High</p> <p>Sustainability Not Reported</p>	<p>Not Reported</p>	<p>Not Reported</p>

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p>Author Farley, Meriwether (2007), Farley, Meriwether (2008) Louisiana</p>	<p>Participation/Potential Exposure Participation = Not reported Children's attendance after school was measured but not reported. Exposure = High The entire intervention school was exposed to the intervention (enrollment between 366 and 381 each school year). The school yard was open to neighborhood children after school and on the weekends.</p> <p>High-Risk Population High Lower income, 99% African-American, 6-14 year olds, Urban, 37% house-holds headed by women (intervention population)</p>	<p>Representative Not Reported</p> <p>Potential Population Reach More Evidence Needed Participation = Not reported Exposure = High Representativeness = Not reported</p> <p>Potential High Risk Population Reach More Evidence Needed High-risk population = High Representativeness = Not reported</p>	<p>Intervention Components Simple After school and weekend access to safe, supervised schoolyards</p> <p>COMPLEX: 1. Playground supplied with footballs, basketballs, jump ropes, Frisbees, balls, hoops, parachutes, a music player, and sprinkler 2. Attendants supervised playgrounds when open 3. Publicized availability of the schoolyard for free play</p> <p>Feasibility Intervention feasibility = High Policy component feasibility = High Intervention activities: The intervention schoolyard was open and supervised during non-school hours after school (3:00PM to 5:30 PM/dark) on weekdays and on weekends (Saturday: 10:00 AM-3:00PM, Sunday: 12:00-3:00 PM). Attendants (3-4), almost all of whom were teachers, were paid to provide supervision and verify consent and age. Attendants did not organize, require, or suggest specific activities to children. Specialized expertise: Before collecting data, observers were trained in SOPLAY for an average of three 2-hour trainings sessions. Resources needed: Personnel to supervise, equipment, funding for training and personnel Costs: Not reported</p> <p>Implementation Complexity Low Intervention components = Simple Feasibility = High</p>	<p>Population Impact More Evidence Needed Effectiveness = More Evidence Needed Potential population reach = More evidence needed Implementation complexity = Low</p> <p>High-risk Population Impact More Evidence Needed Effectiveness = Not effective for overweight/obesity and effective for physical activity and sedentary behavior in lower-income, African-American students Potential high-risk population reach = More evidence needed Implementation complexity = Low</p> <p>Sustainability Not Reported</p>	<p>Not Reported</p>	<p>1. Children in the basketball and equipped concrete areas were more likely than children in the field to be "very active" (31% vs 25%, p=0.05 and 34% vs 25%, p<0.01, respectively). Children playing in the play structure area were nearly twice as likely as those in the field to be coded as "very active" (51% versus 25%, p<0.001).</p>

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p>Author Williams, Carter (2009) New Mexico</p>	<p>Participation/Potential Exposure Participation = Not reported Exposure = High All children in the 9 participating centers were exposed to the additional 10 minutes of physical activity each day.</p> <p>High-Risk Population Not Reported 3-5 year olds Adults, Lower-income (target population) 74% Latino/Hispanic, 15% White, 8% bi-or multi-racial, and 2% African-American (evaluation sample)</p>	<p>Representative Not Reported</p> <p>Potential Population Reach More Evidence Needed Exposure = High Representativeness = Not reported Participation = Not reported</p> <p>Potential High Risk Population Reach More Evidence Needed High-risk population = Not reported Representativeness = Not reported</p>	<p>Intervention Components Simple Animal Tracker (AT) –pre-school policy to increase structured physical activity (PA) and gross motor skills by incorporating a 10 minute period of structured physical activity into the curriculum each day.</p> <p>COMPLEX: 1. Teachers were encouraged to gradually increase their daily step count.</p> <p>Feasibility Intervention feasibility = High Policy component feasibility = High</p> <p>Intervention activities: A 10 minute period of structured physical activity incorporated into the curriculum each day. The researchers and a health educator trained teachers in a 1.5 hour session. Training included a curriculum overview including the importance of structured physical activity, role playing of activities and encouragement for walking among teachers. Teachers implemented the Animal Tracker curriculum in the classrooms.</p> <p>Specialized expertise: A health education specialist was brought in to train teachers.</p> <p>Resources needed: Program materials including a compact disc of activities, health education specialists for teacher training, materials for the teacher training</p> <p>Costs: Not reported</p> <p>Implementation Complexity Low Intervention components = Simple Feasibility = High</p>	<p>Population Impact More Evidence Needed Effectiveness = Somewhat effective for physical activity in the study population Potential population reach = More evidence needed Implementation complexity = Low</p> <p>High-risk Population Impact More Evidence Needed Effectiveness = More evidence needed Potential high-risk population reach = More evidence needed Implementation complexity = Low</p> <p>Sustainability Not Reported</p>	<p>Not Reported</p>	<p>Not Reported</p>

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p>Author Slawta, Bentley (2008) Oregon</p>	<p>Participation/Potential Exposure Participation = Not reported Exposure = Not reported</p> <p>High-Risk Population Not Reported 6-12 year olds (target population)</p>	<p>Representative Not Reported</p> <p>Potential Population Reach More Evidence Needed</p> <p>Participation = Not reported Exposure = Not reported Representativeness = Not reported</p> <p>Potential High Risk Population Reach More Evidence Needed</p> <p>High-risk population = Not reported Representativeness = Not reported</p>	<p>Intervention Components Multi-component</p> <p>Be a Fit Kid – after school program designed to provide physical activity opportunities and healthful foods for children</p> <p>MULTI-COMPONENT: 1. Provision of healthful foods</p> <p>COMPLEX: 1. Physical activity component emphasized cardio-vascular fitness 2. Nutrition component provided current dietary guidelines and sampling of fruits and vegetables, foods containing unsaturated fats, and whole grains. 3. Fieldtrips to supermarkets 4. Parent component: Initiation lecture was held prior to start of program covering nutrition and physical activity principles.</p> <p>Feasibility Intervention feasibility = Low</p> <p>Policy component feasibility = High</p> <p>Intervention activities: The after school program was offered 3 times a week for 2 hours over the course of 12 weeks. The physical activity component was run by college students who worked with small groups focusing on strength training, jumping activities and yoga. Other leisure time activities were accomplished by hiking and ice-skating field trips. Children were rewarded with incentives when they met fitness goals. Following the physical activity component, a variety of healthy food items were distributed to children for them to sample (e.g. salmon and almond butter). This was accompanied by education focusing on current dietary guidelines emphasizing diet rich in fruits and vegetables, unsaturated fats, and whole grains. Nutrition packets were sent home weekly to parents with raffles for children returning signed form from parents. Field trips to supermarkets taught children what foods to select. The local food cooperative contributed money (\$1,000) for healthful foods, as did many smaller community sponsors.</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>Implementation Complexity High</p> <p>Intervention components = Multi-component</p> <p>Feasibility = low</p>	<p>Population Impact More Evidence Needed</p> <p>Effectiveness = Somewhat effective for physical activity and overweight/obesity in the study population</p> <p>Potential population reach = More evidence needed</p> <p>Implementation complexity = High</p> <p>High-risk Population Impact More Evidence Needed</p> <p>Effectiveness = More evidence needed</p> <p>Potential high-risk population reach = More evidence needed</p> <p>Implementation complexity = High</p> <p>Sustainability 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>Child Care Food and Beverage Policies <u>NUTRITION:</u></p> <ol style="list-style-type: none"> By using a t-test, significant improvements were observed in some dietary habits from pre- to post-intervention including total fat (pre= 33% to post= 26%, p<0.0001), saturated fat (pre= 12% to post= 8%, p<0.0001), and mono-unsaturated fat (pre= 10% to post= 8% p=0.009). 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). 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). 	<ol style="list-style-type: none"> By using a t-test, there were significant reductions observed in high density lipoprotein cholesterol from pre- to post-intervention (pre= 1.2±0.1 to post= 1.2±0.3, p=0.015).

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<p>Author Dowda, Pate (2004), South Carolina</p>	<p>Participation/Potential Exposure Not Applicable</p> <p>High-Risk Population Not Applicable</p> <p>Only cross-sectional data provided.</p> <p>Preschool Children 3-5 years old (targeted sample)</p> <p>47.4% male, 62.4% African-American, 32.7% White, and 4.9% Other (evaluation sample)</p>	<p>Representative Not Applicable</p> <p>Potential Population Reach Not Applicable</p> <p>Potential High Risk Population Reach Not Applicable</p>	<p>Intervention Components Not Applicable</p> <p>Only cross-sectional or descriptive data provided</p> <p>Availability of preschool policies to increase the amount and quality of moderate-to-vigorous physical activity including:</p> <ol style="list-style-type: none"> 1. 3 or more field trips per month 2. Community organization visits 3. Electronic media use ≤45 min/day 4. ≥45 minutes/day of time spent outside 5. ≥50% of teachers with a college degree 6. ≥120 minutes/day of free-time physical activity opportunities 7. ≥ 90 minutes/day of outside physical activity 8. ≤ 17 children per classroom 9. Preschool quality score <p>Feasibility Not Applicable</p> <p>Implementation Complexity Not Applicable</p> <p>Intervention components = Not applicable</p> <p>Feasibility = Not applicable</p>	<p>Population Impact Not Applicable</p> <p>High-risk Population Impact Not Applicable</p> <p>Sustainability Not Applicable</p>	<p>Not Reported</p>	<p>1. Support from community organizations, television watching/ computer use, and preschool quality were not associated with MVPA levels either overall or on the playground.</p>
<p>Author Dowda, Brown (2009) South Carolina</p>	<p>Participation/Potential Exposure Not Applicable</p> <p>High-Risk Population Not Applicable</p> <p>Only cross-sectional data provided</p> <p>3-5 year olds (target population)</p> <p>49% Black, 42% White, and 10% other race/ethnicity (evaluation sample)</p>	<p>Representative Not Applicable</p> <p>Potential Population Reach Not Applicable</p> <p>Potential High Risk Population Reach Not Applicable</p>	<p>Intervention Components Not Applicable</p> <p>Only cross-sectional or descriptive data provided</p> <p>Preschool policies and characteristics promoting physical activity (PPA) including:</p> <ol style="list-style-type: none"> 1. 3 or more field trips per month 2. 4 or more community organization visits per month 3. ≥60 minutes/day of teacher-led physical activity 4. ≥60 minutes/day of time spent outside 5. ≥50% of teachers with a college degree 6. ≥120 minutes/day of physical activity opportunities 7. Teachers with recent physical activity training 8. Low electronic media use (<7% of observations) 9. ≥1 piece portable playground equipment 10. ≤8 pieces fixed playground equipment 11. ≤15 children per classroom 12. Playground size ≥4157 ft² 13. Classroom size ≥347 ft² <p>Feasibility Not Applicable</p> <p>Implementation Complexity Not Applicable</p> <p>Intervention components = Not applicable</p> <p>Feasibility = Not applicable</p>	<p>Population Impact Not Applicable</p> <p>High-risk Population Impact Not Applicable</p> <p>Sustainability Not Applicable</p>	<p>Not Reported</p>	<p>Not Reported</p>

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p>Author Choy, McGurk (2008) Hawaii</p>	<p>Participation/Potential Exposure Not Applicable</p> <p>Only descriptive data provided</p> <p>In-Motion has served more than 1,000 registered participants.</p> <p>Approximately 11% (n=98) of responding students indicated that they had attended one of In-Motion's classes; however, this proportion is probably higher, as students may not have realized that some classes they attended were affiliated with In-Motion.</p> <p>High-Risk Population Not Applicable</p> <p>Only descriptive data provided</p> <p>Urban, 14-18 year old children and adults (targeted population)</p> <p>Farrington High School students: >60% free/ reduced-cost lunches, 58% Filipino, 13% Samoan, 12% Native Hawaiian, 64.3% of adolescents living in the Farrington area reported living in unsafe neighborhoods. (target population)</p> <p>Farrington neighborhood: >46,000 residents, 46.7% Filipino, 15.6% foreign-born recent immigrants, \$14,634 per-capita income. (intervention population)</p> <p>Residents of the community have higher rates of unemployment, higher use of welfare and food stamp assistance, and lower levels of home ownership than all residents in the state. (intervention population)</p> <p>Most participants were female (66.5%), younger than 18 years (52.8%), Filipino (40.9%), and Farrington High School students (52.2%). (evaluation sample)</p>	<p>Representative Not Applicable</p> <p>Potential Population Reach Not Applicable</p> <p>Potential High Risk Population Reach Not Applicable</p>	<p>Intervention Components Not Applicable</p> <p>Only descriptive data provided</p> <p>In-Motion was a joint use agreement pilot project to increase physical activity by utilizing school facilities to provide organized recreational classes for students, staff and community members during and after school hours.</p> <p>COMPLEX: 1. Organized recreational classes for students, staff, and community members during and after school hours</p> <p>Feasibility Not Applicable</p> <p>Only descriptive data provided.</p> <p>Intervention activities: In-Motion was managed by 2 full-time project staff: a project manager (a Dept. of Parks and Recreation employee) and a project coordinator (a contracted employee). The joint-use agreement set parameters for use and maintenance of facilities, fee schedule, staffing, use of materials and equipment, liability and risk of loss. The Dept. of Parks and Recreation assumed liability for In-Motion activities. The school assumed responsibility for general cleaning and maintenance of the facilities and did not charge the Dept. of Parks and Recreation any fees for use of facilities. Classes were offered to students, teachers/staff and community members free of charge and were offered at different times of the day to attract different target groups (e.g., lunchtime classes for students, early evening classes for working adults).</p> <p>Specialized expertise: Not reported</p> <p>Resources needed: Project manager and coordinator, class instructors, recruitment material (e.g., daily bulletins, banners, flyers, newspaper advertisements), equipment for classes, cleaning and facility maintenance</p> <p>Costs: Not reported</p> <p>Implementation Complexity Not Applicable</p> <p>Intervention components = Not applicable</p> <p>Feasibility = Not applicable</p>	<p>Population Impact Not Applicable</p> <p>High-risk Population Impact Not Applicable</p> <p>Sustainability Not Applicable</p>	<p>Not Reported</p>	<ol style="list-style-type: none"> 61.6% of In-Motion participants (n=320) strongly agreed that In-Motion provided a safe place to exercise (22.2% agreed, 11.6% neutral, 2.2% disagreed, 3.2% strongly disagreed). 59.4% of In-Motion participants (n=320) strongly agreed that the In-Motion recreational classes helped them to exercise more (23.4% agreed, 10.9% neutral, 1.9% disagreed, 0.9% strongly disagreed) All responding teachers and staff agreed that the project had a positive impact on the school and that it was beneficial to students. They reported that the project provided needed opportunities for physical activity, incurred social benefits (e.g., making new friends), kept students out of trouble, and promoted healthy lifestyles.

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
International						
<p>Author Reilly, Kelly (2006) Scotland</p>	<p>Participation/Potential Exposure Participation = High Attendance in each physical activity session was recorded. At the level of the child, 71% of prescribed sessions were attended (lower quartile 57%, upper quartile 81%). At the nursery level, 83% of prescribed sessions of the physical activity program were actually offered. Exposure = High The nursery based element was offered through three 30 minute sessions per week over 24 weeks.</p> <p>High-Risk Population Not Reported 3-4 year olds (target population)</p>	<p>Representative Not Applicable</p> <p>Potential Population Reach More Evidence Needed Participation = High Exposure = High Representativeness = Not reported</p> <p>Potential High Risk Population Reach More Evidence Needed High-risk population = Not reported Representativeness = Not reported</p>	<p>Intervention Components Complex Movement and Activity Glasgow Intervention in Children (MAGIC) – Nursery school physical activity policy to increase physical activity by implementing three 30 minute physical activity sessions each week for 24 weeks.</p> <p>COMPLEX: 1. Home element (informational leaflets on physical activity in home, television reduction)</p> <p>Feasibility Intervention feasibility = High Policy component feasibility = High Intervention activities: The nursery based element was an enhanced physical activity program consisting of three 30 minute sessions of physical activity each week over 24 weeks. The home element including the family receiving a resource pack of materials and two simple health education leaflets. Control groups did not receive any intervention and agreed not to enhance their physical development and movement curriculum. Specialized expertise: Nursery staff attended 3 training sessions and implemented the intervention. Resources needed: Nursery and home curriculum, resource packet of materials (2 leaflets), physical activity posters Costs: The nursery element of the intervention was intended to be inexpensive and therefore generalizable (capital cost <£200, €297, \$377). The home based element of the intervention had two parts: each participating family received a resource pack of materials costing £16 (€24, \$30), with guidance on linking physical play at nursery and at home, and two simple health education leaflets.</p> <p>Implementation Complexity High Intervention components = Complex Feasibility = High</p>	<p>Population Impact More Evidence Needed Effectiveness = Not Effective for overweight/obesity in the study population, effective for physical activity in the study population, and not effective sedentary behavior in the study population Potential population reach = More evidence needed Implementation complexity = Low</p> <p>High-risk Population Impact More Evidence Needed Effectiveness = More evidence needed Potential high-risk population reach = More evidence needed Implementation complexity = Low</p> <p>Sustainability Not Reported</p>	Not Reported	1. In modeling, the change in score for fundamental movement skills increased in girls more than boys, the average difference in improvement being 0.7 units (0.3 to 1.1, p=0.001, n=481)(no further statistics).

Study Description	Population	Reach	Intervention	Impact & Sustainability	Other Results	Related Benefits & Consequences
<p>Author Cardon, Labarque (2009) Belgium</p>	<p>Participation/Potential Exposure Participation = Not reported Exposure = Not reported</p> <p>High-Risk Population Not Reported 4-5 year olds (target population)</p>	<p>Representative Not Reported</p> <p>Potential Population Reach More Evidence Needed</p> <p>Participation = Not reported Representativeness = Not reported Exposure = Not reported</p> <p>Potential High Risk Population Reach More Evidence Needed</p> <p>High-risk population = Not reported Representativeness = Not reported</p>	<p>Intervention Components Simple</p> <p>Addition of playground equipment and markings at public pre-schools.</p> <ol style="list-style-type: none"> 1. Play equipment was made available to the children during all recesses. 2. A one-hour introduction was held for children with play equipment. <p>Feasibility Intervention feasibility = High Policy component feasibility = High</p> <p>Intervention activities: Playground markings consisted of a trail, a river with crossings, and a flower-shaped hopscotch. The markings were developed by the research team in cooperation with 3 pre-school teachers. The playground markings and sets of play equipment were provided to the intervention schools by the research team within 4 weeks after baseline data was collected. Within 1 week of implementation, the pre-school teachers spent 1 hour teaching children how to use the playground equipment.</p> <p>Specialized expertise: Not reported</p> <p>Resources needed: Playground markings, play equipment (e.g., balls, rings, discs, bean bags, hoops, flags), research personnel</p> <p>Costs: Total cost of \$370 for playground equipment and supplies.</p> <p>Implementation Complexity Low</p> <p>Intervention components = Simple Feasibility = High</p>	<p>Population Impact More Evidence Needed</p> <p>Effectiveness = Not effective for physical activity in the study population</p> <p>Potential population reach = More evidence needed</p> <p>Implementation complexity = Low</p> <p>High-risk Population Impact More Evidence Needed</p> <p>Effectiveness = Not reported</p> <p>Potential high-risk population reach = Not reported</p> <p>Implementation complexity = Low</p> <p>Sustainability Not Reported</p>	<p>Not Reported</p>	<p>Not Reported</p>