

Children's Physical Activity and On-Task Behavior following a Classroom Intervention

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ABSTRACT

Background/Purpose

Increasing physical activity (PA) levels of children is the goal of many school-based PA promotion programs. Children should accumulate at least 60 minutes of PA per day for enhanced health benefits. However, only 42% of children aged 6 to 11 years obtained the recommended 60 minutes of PA per day.

Children who go through prolonged periods of academic instruction often become more fidgety or restless and experience reduced concentration. Direct observation in the classroom is the best strategy to measure students' on-task behavior, but such behavior is typically more difficult to measure because of the burden placed on the observers, and time required for recording the observation. Previous research indicates that PA breaks in the general education classroom can increase children's PA and on-task behavior. To build on previous research, the purpose of the present study was to examine the effect of a classroom PA break intervention, TAKE 10![®], on children's PA and on-task behavior.

METHODS

Participants

- 210 elementary school children
- 3-5 grades (three 3rd, three 4th, and three 5th grade classes)
- Racially diverse school near a large Southwestern city in United States
- Exclusion criteria: serious health conditions, injuries or illnesses

Measures

Physical Activity

- Yamax Digiwalker Pedometers (CW 600)

On-task Behavior

- Momentary time sampling method
- 5-second interval
- Coding form

On-Task Behavior Observation

Recorder: _____ (U) / (S) Teacher: _____
 School: _____ Grade: _____ Date: _____
 Time started: _____ Time finished: _____ Baseline/Intervention: _____ PA-Post-Activity: _____

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
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METHODS (CONTINUE)

Procedures

- 12-week project: 4-week baseline, 8-week TAKE 10![®] intervention
- Teachers trained to implement TAKE 10![®] in the classroom
- Average of 1 TAKE 10![®] activity was implemented during each school day

Physical Activity

- Data was collected at baseline (week 1), mid-intervention (week 8), and end-intervention (week 12)
- Students wore pedometers from Monday to Thursday during the school day at weeks 1, 8 and 12
- Values below 1,000 and above 30,000 were treated as outliers

On-task Behavior

- Weeks 1-4: Baseline observation. Weeks 9-12: Intervention observation
- 1 primary observer. Secondary observers observe 50% of all observations
- 30 minute observation pre-no TAKE 10![®] and post-no TAKE 10![®] during baseline
- 30 minute observation pre-TAKE 10![®] and post-TAKE 10![®] during intervention

Data Analysis

Physical Activity

- Daily in-school PA levels quantified by average number of steps
- Repeated measure ANOVA compared means between baseline, mid-intervention and end-intervention
- Significance Levels at .05

On-task Behavior

- 4 means of on-task behavior
 - pre-no TAKE 10![®] (baseline)
 - post-no TAKE 10![®] (baseline)
 - pre-TAKE 10![®] (intervention)
 - post-TAKE 10![®] (intervention)
- Two-way (time x period) repeated-measures analysis of variance
- Bonferroni procedure adjusted for multiple comparison

RESULTS

Physical Activity

	Step Counts (Mean ± SD)
Baseline	5629 ± 1232
Mid-intervention	6301 ± 1500*
End-intervention	5477 ± 1417

* p < 0.001 between baseline and mid-intervention

On-task Behavior

	On-Task Behavior Percentage (Mean ± SD)
Pre-no TAKE 10! [®]	91.2 ± 3.4
Post-no TAKE 10! [®]	83.5 ± 4.0*
Pre-TAKE 10! [®]	82.3 ± 4.5
Post-TAKE 10! [®]	89.5 ± 2.7#

* p = 0.001 between pre and post No TAKE 10

p = 0.001 between pre and post TAKE 10

CONCLUSION

- Children's on-task behavior increased by 7.2% during intervention and decreased by 7.7% during baseline
- 96% inter-observer reliability between primary and secondary observers
- Children's in-school PA increased significantly by approximately 672 steps from baseline to mid-intervention
- The decrease in in-school PA during end-intervention may be attributed to reduction in outdoor PA participation during the winter season
- More sources of indoor PA should be provided during the winter season

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