

Behavioral and Social Approaches to Increase Physical Activity: Enhanced School-Based Physical Education

Summary Evidence Table - Intervention and Control Description

Author (year)	Intervention Type	Intervention Duration	Intervention Description	Additional Intervention Components	Intervention Teacher Type	Theoretical Basis for Intervention	Control Description
Fairclough and Stratton (2005)	Teaching strategies (gymnastics)	5 weeks	The teacher was made aware of the study aim (to improve students' MVPA). Suggested strategies were: (1) organization of groups and use of space, equipment and resources; (2) teaching approaches; (3) lesson pace; (4) teacher positioning; (5) active learning; and (6) having fun.	NR	Physical education specialist	None stated	Usual practice. Same lesson content, but no emphasis on increasing MVPA.
Ignico et al. (2006)	Fitness infusion	24 weeks	Fitness infusion: skill development in 6 skill areas with short bouts of MVPA between practice attempts.	NR	Physical education teacher	None stated	Traditional skill development
McKenzie et al. (1996)	Teaching strategies (various)	130 weeks	CATCH: Goal to provide MVPA during enjoyable PE lessons. Intervention included: (a) CATCH PE curriculum and materials; (b) PE equipment (c) teacher training; and (d) on-site consultation with teachers. Teachers asked to engage students in MVPA during at least 40% of the PE class period and	Food service intervention, classroom curricula promoting cardiovascular health, a tobacco curriculum and school policy, and home/family component. Home/family component implemented in 28 of 56 intervention schools)	Dependent on location, mix of classroom teachers and PE teachers	Social learning theory	Usual practice. Schools agreed to provide a minimum of 90 mins of PE spread over 3 sessions/week.

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			to provide at least 90 minutes of PE spread over a minimum of three sessions per week.				
McKenzie et al. (2004)	Teaching strategies (various)	104 weeks	M-SPAN: Professional development sessions for teachers. Sessions designed to create awareness, assist teachers to promote MVPA through modified curricula, improved curricula, PE equipment, and enhanced management and instructional skills.	NR	Certified PE teachers	Social learning theory, Ecological theory ^a	Usual practice.
Quinn and Strand (1995)	Fitness Infusion (American football)	4 weeks	Fitness Skill Play Integration Model: Time for skill development and game play was reduced to allow for an aerobic fitness component in the last 10 mins of lesson.	NR	Certified PE teacher	None stated	Skill Play Integration Model: Skill development and game play continued for entire lesson. No fitness component at end of class.
Rowlands et al. (2008)	Other (dance and soccer)	1 week	Motiv8: Instructors from an external agency taught PE lessons with goals of 20 mins moderate and 10 min vigorous activity during 1-hour lessons 2x/week	NR	Trained instructors/ coaches from external agency	None Stated	Usual practice. Lessons taught by specialist teacher employed by school.
Sallis et al. (1997)	Teaching strategies (various)	104 weeks	SPARK: PE classes designed to promote high levels of physical activity, teach movement skills and be enjoyable. Schools were recommended to	Self-management program: Taught behavior-change skills to help children generalize PA outside of school. Weekly 30 min	IG1: Certified PE specialists IG2: trained classroom teachers CG: untrained classroom	Social learning theory	Usual practice and schools provided with equipment

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			schedule three 30 minute PE lessons each week.	classroom sessions including self-monitoring, goal-setting, stimulus control, self-reinforcement, self-instruction and problem-solving. Homework and monthly newsletters were provided to stimulate parent-child interaction and support for physical activity. All schools (including control schools) were provided with sufficient PE equipment to carry out the SPARK program.	teachers		
Scantling and Dugdale (1998)	Fitness infusion (badminton)	4 weeks	Fitness Skill Play Integration Model: Fitness activities during attendance taking place at start of class, followed by skill development and game play, 10 minute aerobic fitness component in the last 10 min of lesson.	NR	Physical education teacher	None stated	Skill Play Integration Model: Skill development and game play continued for entire lesson. No fitness component at end of class.
Simons-Morton et al. (1991)	Teaching strategies (various)	35 weeks	CAPE: 5X 6-8 week units designed to encourage MVPA. Each unit included cardiovascular fitness activities such as dancing, running,	Go For Health Program included the CAPE intervention, Go For Health curriculum (6 health education lessons), and the	NR	Social cognitive theory	Usual practice

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			aerobic games, jump rope and obstacle courses.	New School Lunch (modifications to lunch offerings, food purchasing, menus, recipes, and food preparation).			
Strand and Anderson (1996)	Fitness infusion (American football)	4 weeks	Fitness Skill Play Integration Model: Time for skill development and game play was reduced to allow for an aerobic fitness component in the last 10 min of lesson.	NR	NR	None stated	Skill Play Integration Model: Skill development and game play continued for entire lesson. No fitness component at end of class.
Van Beurden et al. (2003)	Teaching strategies (various)	22 weeks	Move It Groove It: Intervention focused on supporting teachers and creating supportive environments and healthy school policies. Buddy system used to improve PE teaching and increase PA levels and fundamental movement skills mastery by matching pre-service teachers with generalist classroom teachers. Professional development and a project Web site were developed to provide additional teacher training and resources. Schools offered (\$375.00AU = \$247.00USD in 2003) to purchase equipment.	NR	Trained generalist teachers	None stated	Usual practice

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Verstraete et al. (2007)	Teaching strategies (various)	78 weeks	Portions of SPARK intervention: Didactic guidelines provided to teachers to provide health-related physical education and increase MVPA during lessons, including organization, management and instruction tips. Sample SPARK PE lessons were provided.	NR	Physical education specialist	Based on SPARK intervention	Usual practice
Webber et al. (2008)	Teaching strategies (various)	104 weeks	TAAG: PE-specific portions of the intervention included class management strategies, skill-building activities, emphasis on the importance of engaging girls in MVPA during class, and the provision of appropriate equipment and choices of physical activity. Goal to incorporate MVPA for at least 50% of class time.	Environmental and organizational changes supportive of PA including partnerships with community agencies to provide more PA opportunities, social marketing to promote awareness of events, school health education (6 lessons), and program champions to sustain program efforts.	Physical education teachers	Full intervention was based on operant learning theory, social cognitive theory, organizational change theory, the diffusion of innovation model in a social-ecological framework	Usual practice
Young et al. (2006)	Teaching strategies (various)	35 weeks	MVPA during PE was promoted by teaching topics that were active in nature (e.g. soccer, vs. softball), breaking skills training (soccer vs. softball), breaking skills training into small-group activities, and playing games in small groups. Skills training was limited to	Skills taught using class lectures and discussions (in PE class), small-group discussions (in PE class), and home-work activities. Students were encouraged to keep weekly exercise logs from which the teacher provided	Teacher hired by the project	Full intervention based on social action theory	Usual practice. Families also received a 2-page family support newsletter each month.

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			that needed for competency, rather than proficiency. 1 semester of individual sports and 1 semester of team sports, taught 5 days/week.	feedback on progress toward goal achievement. Family support component consisted of a family workshop, monthly newsletters, and adult-child homework assignments.			

^a Personal communication from T. McKenzie on June 30th, 2012.

Derived from: Lonsdale C, et al. A systematic review and meta-analysis of interventions designed to increase moderate-to-vigorous physical activity in school physical education lessons. *Prev Med* 2013;56(2): 152-61, Table 2.

Abbreviations:

MVPA, Moderate- or Vigorous-Intensity Physical Activity

NR, Not Reported

SOFIT, System for Observing Fitness Instruction Time