



promoting physical activity in afterschool programs

**SELF-
PORTRAIT
(BASKET-
BALL)** Since
I'm into
sports,
I wanted to
take a
picture of
me with a
basketball.
*OUR WORLD
IN PICTURES*

by Aaron Beighle, Michael W. Beets, Heather E. Erwin, Jennifer Huberty, Justin B. Moore, and Megan Stellino

Children in the United States are not engaging in sufficient amounts of routine physical activity, and this lack is an emerging public health concern (Strong, Malina, Blimkie, Daniels, Dishman, Gutin, et al., 2005). Efforts to increase the physical activity levels of children and adolescents has become a national priority, attracting attention from professionals in medicine, public health,

education, recreation, economics, and health promotion (Pate, et al., 2006). In an effort to promote physical activity among all Americans, the U.S. Department of Health and Human Services (USDHHS, 2008) created evidence-based (Strong, et al., 2005) physical activity guidelines. They recommend that children engage daily in 60 minutes or more of developmentally appropriate, enjoyable physical activities that are moderate to vigorous in intensity. Nationally, youth are not meeting these guidelines. Of particular concern are the low physical activity levels among underserved youth in, for example, rural, minority, and low-income communities (Adams, 2006; Hertz,

Stevens, Holden, & Petosa, 2009; Moore, Davis, Baxter, Lewis, & Yin, 2008; Singh, Kogan, Siahpush, & van Dyck, 2008; Treuth, Hou, Young, & Maynard, 2005; Troiano, et al., 2008).

For many years, schools were thought to have great potential for providing youth with physical activity opportunities (Sallis & McKenzie, 1991). However, increased emphasis on academic achievement has led to decreased physical activity in schools. Subjects such as art, music, and physical education, as well as recess, are being viewed as “extras” that interfere with academics

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(Andersen, Crespo, Bartlett, Cheskin, & Pratt, 1998). Many organizations and legislatures are calling on schools to expand their role in physical activity promotion (Pate, et al., 2006). Schools are ideal locations for physical activity promotion (USDHHS, 2000): They have infrastructure in place, and most U.S. children attend school. However, quality afterschool programs also offer great potential for increasing young people's physical activity levels.

Nearly 6.5 million children attend afterschool programs, and this number is rising (Afterschool Alliance, 2004). Afterschool programs can complement school-day efforts to promote physical activity; they offer a safe environment in which youth can engage in physical activity and learn healthy lifestyle habits (Booth, et al., 2001). A consensus from the "Summit on Promoting Healthy Eating and Active Living" reported that afterschool programs have great potential for a high impact on youth physical activity (Booth & Okely, 2005). Furthermore, physical activity, including that accumulated during afterschool programs, can foster cognitive, social, and academic benefits, as well physical benefits such as decreased risk for cardiovascular disease (Sibley & Etnier, 2003; Strong, et al., 2005).

This paper will provide program leaders and staff with a brief overview of what is known about physical activity in afterschool programs. Then, by integrating experience in afterschool programming with expertise in health promotion, physical education, physical activity promotion, public health, and the social psychology of sport and physical activity, we will present strategies and recommendations for promoting physical activity in afterschool settings.

Evidence of Physical Activity in Afterschool Programs

Our search of official documents of prominent national and state afterschool organizations—position statements, training manuals, pamphlets, and other publications—revealed little discussion of physical activity. While many of these documents mention the importance of physical activity and its role in obesity prevention and youth development, an in-depth presentation of policies and practices that would transfer belief to action, so that physical activity

would be integral to high-quality afterschool programming, is absent (Afterschool Alliance, 2006).

Evidence supporting the effectiveness of afterschool programs in promoting physical activity is beginning to surface; however, findings are mixed due to the methodological weaknesses in many studies (Beets, Beighle, Erwin, & Huberty, 2009; Pate & O'Neill, 2009). In a meta-analysis, Beets and colleagues (2009) found six interven-

tion studies which reported physical activity outcomes. Of these, four reported positive effects on physical activity. Pate and O'Neill (2009) reported on five randomized control trials of afterschool programs that used objective measures of physical activity. Three of these programs were effective in increasing physical activity. This same paper reviewed the findings of three studies that used self-report measures. These findings were mixed, again with many inconsistencies in methodologies. A common weakness in methodology or reporting of findings has been the lack of a detailed description of the intervention. For example, the content of staff training, the environment, and the activities used are not discussed. Little is offered regarding the

policies and practices associated with effective physical activity promotion in afterschool programs (Beets, et al., 2009).

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About These Recommendations

In any afterschool program, decisions are made at many levels due to a variety of priorities. This paper will focus on the program and staff levels of decision making.

- **Program-level recommendations** focus on informing the decisions of organization leaders that influence physical activity promotion. Examples include the amount of time allocated for physical activity each day or the amount of staff training related to physical activity.
- **Staff-level recommendations** focus on strategies to improve staff behaviors and decisions related to physical activity. The ways in which staff members interact with youth or the physical activities they select are examples of staff-level recommendations.

The following recommendations reflect either evidence-based strategies or promising practices. **Evidence-based strategies** have been shown empirically to have a beneficial impact on physical activity levels. Some of our rec-

ommendations are evidence-based in contexts other than afterschool, such as physical education or youth sport. For example, strategies for working with children in physical education classes can easily be adapted for children engaged in physical activity in afterschool programs. **Promising practices** are not yet based on empirical evidence but are intuitively and theoretically linked to increased physical activity levels.

We do not ignore the uniqueness of afterschool programs. Some programs focus on academic enrichment, while others focus on youth sports. However, many of our recommendations could be modified to apply to a variety of settings. These recommendations are intended to be starting points for discussion on decisions that can better promote physical activity for youth in afterschool programs.

Program-level Recommendations

Our program-level recommendations focus on the amount of time for and scheduling of physical activity, staff training, staff-to-student ratios, facilities, equipment, curriculum, and evaluation.

Physical Activity Time

Current recommendations suggest children accumulate 60 minutes or more of moderate-to-vigorous physical activity (MVPA) each day (USDHHS, 2008). On average, children in an afterschool program are active 57 percent of the time that is allocated for physical activity and active at a moderate-to-vigorous level 19 percent of that time (Trost, Rosenkranz, & Dziewaltowski, 2008). Thus, if children were given opportunity to be active for 30 minutes a day, on average they would accumulate 17 minutes of activity time ($30 \times .57$) and roughly 6 minutes of MVPA ($30 \times .19$).

In a program designed to incorporate both health and academic enrichment, we recommend that at least 50 percent of the time be allocated to physical activity. For example, a 2.5-hour program would allocate 75 minutes for physical activity with the expectation that approximately 43 minutes ($75 \times .57$) would be active, with 15 minutes of that time spent in MVPA ($75 \times .19$).

Scheduling Physical Activity

One strategy to increase the amount of time children spend being physically active is to schedule activity in small, frequent bouts. Children's physical activity is sporadic; one study found that, during 15 minutes of recess, boys and girls were active on average for 11 and 9 minutes respectively, or 60 to 70 percent of the time (Beighle, Morgan, Le Masurier, & Pangrazi, 2006). Youth may spend a greater proportion of time being active if time is allocated to activ-

ity in brief increments. Thus, physical activity in afterschool time programs should be segmented into bouts of no more than 15–20 minutes (Bailey, et al., 1995). Children will tend to use the time more efficiently and be active for a greater percentage of the time.

Scheduling activity opportunities throughout the program duration can also assist with behavior problems (Mahar, et al., 2006; Pellegrini & Bohn, 2005). Since children spend a large portion of their day sedentary, they need an opportunity for release after school. An effective strategy would be to allow for 15–20 minutes of physical activity immediately on arriving at the program site (Tudor-Locke, Lee, Morgan, Beighle, & Pangrazi, 2006) and to schedule subsequent opportunities intermittently during the rest of the program time.

Staff Training

Staff who are educated about the policies, philosophy, and expectations of a specific program are much more likely to endorse the program and implement it effectively (Pate, et al., 2003). If an afterschool organization is to effectively promote physical activity, staff must be trained. They should learn best practices including principles of motivation, behavior management, and developmentally appropriate activities (see Staff-level Recommendations on p. 28). The training should be experiential: Staff can learn best practices by actively engaging in them. This approach has been found to be effective in physical education training (Pangrazi & Beighle, 2010). Training should expose individuals, particularly new staff, to program policies and expectations related to physical activity.

High staff turnover is often an issue in afterschool programs. Therefore, staff training needs to happen immediately, before the first day on the job, so that progress is maintained. Staff training can be costly, especially when conducted frequently throughout the year. However, this barrier should not inhibit afterschool programs from providing specific, timely, and thorough staff training on physical activity. Such training can often be part of a partnership process at no cost. For example, local universities may have graduate students in health promotion or physical education who can train staff as part of an internship, volunteer experience, or service learning. Partnerships with health organizations may also help with staff training.

After the initial training, staff should receive booster trainings throughout their tenure in the program (Yin, Gutin, Johnson, Hanes, Moore, Cavnar, et al., 2005a; Yin, Hanes, Moore, Humbles, Barbeau, & Gutin, 2005b). Though booster trainings can come in the form of traditional training with lectures and active participation, an-

LOW-BUDGET PHYSICAL ACTIVITIES

When space and equipment are limited, try these activities adapted from Pangrazi, Beighle, & Pangrazi (2009).

HIGHER OR LOWER

Equipment: White board or sheet of paper

- A number between 1 and 100 is written on the board.
- A student who can't see the number tries to guess it.
- The class tells the guesser if the guess is high or low by jumping in the air for high or touching the toes for low. Students continue to jump or touch toes until the next guess is made.

HIDE THE BEANBAG

Equipment: One beanbag or other small object

- While the searcher covers her eyes, another child hides the beanbag.
- The class walks in place as the searcher looks for the beanbag. When the searcher gets closer to the beanbag, the class walks in place faster. When the searcher moves away, the students walk slower. When the searcher is by the beanbag, the class is jogging in place.
- The searcher then becomes the hider, and another searcher is selected.

KNOT

Equipment: None

- Groups of four or five stand shoulder to shoulder in a circle.
- Students reach both arms into the middle of the circle and grasp the hands of two different people.
- The group tries to return to a circle by twisting around and going over and under without letting go of hands.

other approach is to observe staff members working with children and provide immediate feedback. While it is not usually thought of as “training,” this approach has long been used effectively with physical education teachers.

Staff-to-Student Ratio

A low staff-to-student ratio is always desirable, but particularly during physical activity. Some studies show that quality afterschool programs have a ratio as low as 1:8 (Baldwin Grossman, Lind, Hayes, McMaken, & Gersick, 2009; National Afterschool Association, 2000). This ideal ratio may not be cost effective, particularly in a multi-purpose afterschool program that provides both academic enrichment and physical activity. In physical education, recommended student-to-teacher ratios are consistent with what is expected for classroom teachers, typically in the 1:25 or 1:30 range (Pangrazi & Beighle, 2010). However, this ratio applies to highly trained physical education teachers.

The Move More After-School Collaborative (2009) has suggested that a 1:15 staff-to-student ratio is acceptable for afterschool programs.

Facilities

To adapt to inclement weather, provide a variety of activities, and allow ample time for physical activity, afterschool programs need both indoor and outdoor physical activity spaces. A group of 20 elementary-age children needs a space 40 feet by 60 feet in order to move safely. A smaller space would be potentially hazardous, restrict movement, and ultimately detract from students' enjoyment of physical activities. Afterschool programs that do not have appropriate facilities can consult resources on physical activities in small spaces (Pangrazi, Beighle, & Pangrazi, 2009; Sutherland, 2006).

Afterschool programs must consider child safety when designating areas for physical activity. Ideally, boundaries will be marked at ample distance from walls in indoor spaces. Outdoor spaces should be void of holes, tree limbs, and other dangers. When possible, activity space should be at an appropriate temperature for physical activity and well lit, with access to drinking fountains and restrooms (Pangrazi & Beighle, 2010).

Equipment

Numerous studies in a variety of settings have found that the availability of equipment promotes youth physical activity (Hastie & Saunders, 1991; Jago & Baranowski, 2004; Verstraete, Cardon, De Clercq, & De Bourdeaudhuij, 2006). The “equipment” in these studies has been simple, inexpensive items such as playground balls, jump ropes, bean bags, and soccer balls. Ideally, a piece of equipment would be available for every child, so that, if children are playing with bean bags, every child has a bean bag. Children then have to wait less; they can be more active, develop more skills, and enjoy the activity more.

In the face of limited budgets, afterschool program leaders should develop procedures on the care and storage of equipment. Equipment that is taken care of lasts longer. Furthermore, school physical education departments may be willing to share their equipment as long as it is cared for and returned properly (Lambdin & Erwin, 2007). Finally, programs with limited resources can use games that require little or no equipment and minimal space (see box).

Curriculum

An afterschool physical activity curriculum is a series of intentionally planned activities. It should provide a list of activities that are developmentally appropriate, include all

children, and foster success in a safe, fun environment. Ideally, the curriculum itself is developmental, beginning with simple games and activities and moving to more challenging ones as the school year progresses. The pace of progression must be based on the readiness of the students (Pangrazi & Beighle, 2010; Siedentop & Tannehill, 1999).

Evaluation

A quality program must be able to demonstrate a measurable student benefit. Effective evaluation requires setting both goals and objectives. *Goals* are global statements about the desired effect of the program. For example, one goal might be to increase the number of program minutes that children are active. *Objectives* differ from goals in that they are measurable and specific. An objective could be that 80 percent of participants would achieve 30 minutes of MVPA on any given day.

Objectives can be written to evaluate either *process* or *impact* variables. *Process* variables tend to be related to the delivery of the program; they might include the number of children and staff members participating in physical activity time. *Impact* variables assess the behavior in question, such as the number of minutes spent in physical activity. Both need to be evaluated: Impact variables help to determine program effectiveness, while process variables assess the program's fidelity to its stated goals.

Numerous tools are available for evaluating physical activity, ranging from simple paper-and-pencil forms to sophisticated activity monitors (Dollman, et al., 2008; Welk, 2002). Regardless of the measurement tools, evaluation must analyze progress towards the intended goals and objectives in order to demonstrate the quality of the program.

By demonstrating the benefit to participants, an evaluation of a physical activity program can provide evidence that funders' investment in, for example, staff and equipment is well spent. Evaluation results can also help engage the community. If lack of funding or staff expertise in evaluation are issues, partnerships with local universities or health organizations may again provide an answer.

Staff-level Recommendations

Staff-level recommendations focus on best practices for working with children in a physical activity. Recommenda-

tions discussed below deal with structure and choice, active supervision, instructional strategies, behavior management, specific positive feedback, and full participation.

Structure and Choice

Physical activity in afterschool programs is typically offered in either a free play or a structured activity environment (Beets, et al., 2009; Trost, et al. 2008). A *free play* environment is like school recess: a discretionary environment with staff supervision and some playground structures or equipment such as balls and jump ropes. Youth choose which activities to engage in, for how long, and at what intensity. A *structured activity* environment, in contrast, is more like physical education class: All activity is organized and led by a staff member, and all children are expected to engage in the same or similar activities.

Another approach is an *autonomy-supportive* environment, in which students are offered choices of activities and autonomy in decision making (Deci & Ryan, 1987, Ryan & Deci, 2000). The autonomy-supportive environment differs from free play in that youth choose from a limited number of activities while the staff member facilitates choices. For example, one-half of the physical activity area could be dedicated to a game

The autonomy-supportive environment differs from free play in that youth choose from a limited number of activities while the staff member facilitates choices. For example, one-half of the physical activity area could be dedicated to a game of soccer, a quarter to tag games, and a quarter to dancing.

of soccer, a quarter to tag games, and a quarter to dancing. Another strategy is to allow children to make choices within a particular activity. For example, if the group is playing with beanbags, the staff member could allow children to choose whether to catch and toss the beanbag with one hand, two hands, or their knees, or while lying on their back. Numerous studies have found the autonomy-supportive approach to be effective in promoting physical activity (Gutin, Yin, Johnson, & Barbeau, 2008; Wilson, et al., 2008; Yin, et al., 2005b; Yin, et al., 2005c). To meet the needs of all students, we advocate creating a variety of environments including free play, structured activity, and autonomy-supportive environments.

Active Supervision

Physically active staff tend to promote physical activity among children under their watch. In physical education, teachers trained to move about the area while teaching tend to have more physically active classes (Morgan, Beighle, &

Pangrazi, 2007). Afterschool staff can similarly be taught to move randomly around the area, constantly interacting with students. This technique helps staff build rapport with students, models physical activity, and allows staff to be near all students in rotation so they can catch behavior issues and ensure that no students are “lost in the crowd.”

Instructional Strategies

Effective instructional practices will maximize physical activity, decrease behavior issues, and enhance student enjoyment. These practices include:

- Being able to stop and start students quickly
- Grouping students
- Providing concise yet thorough instructions

First, children must be taught a stop signal. The ability to stop students quickly will prove valuable when giving instructions, during emergencies, and when transitioning from one activity to another. An example of a stop signal is the staff member calling out “freeze!” Other signals, such as a whistle or a word specific to the program, could be used. Children are taught to assume a specific position—for example, hands on knees and eyes on the staff member—when they hear the stop signal. Staff and children should practice this routine at the beginning of each physical activity session. No matter what word or signal is used, staff must be consistent in using it. Once children learn to “freeze,” the signal can be used in the gym, outdoors, or in other program locations.

Grouping students is often a time when behavior problems occur. An efficient, humane routine for choosing partners and teams is critical. One approach is a game called “toe to toe.” After freezing the students, the staff member calls out “toe to toe,” and children quickly find a partner. Children without a partner within two seconds come to the middle to find a partner. This routine is quick and encourages students to choose new partners each time. Once students have partners, they can easily be divided into equal teams. The partner with the shortest hair (or another characteristic) raises her hand. When the teacher says, “Go,” the partner with her hand raised reports to one side of the area. The other partner reports to the other side. This provides equal teams, is quick, and keeps one child from being picked last. If teams are not equal in skill, the staff member can quickly ask a few children to switch teams. The key is to switch skilled and unskilled students without being obvious about the reason for switching.

When teaching skills or games, short bouts of instruction are best (Pangrazi & Beighle, 2010). Children tend to lose interest if instructions last longer than 45 seconds. Thus, games and complicated skills must be taught using a

series of short instructions rather than one lengthy bout that explains all the rules. The following is an example of a series of instructions that could be used to teach Addition-Division Tag:

1. When I say, “Go,” please skip-and-hop inside the boundaries. Go!
2. Freeze!
3. This time when I say “Go,” if Kate or José tags you, you become the tagger. Remember to stay inside the boundaries and watch where you are going. Gallop this time. Go!
4. (After 45 seconds) Freeze!
5. Okay. Nice hustle. When I say, “Go,” if Evan, Mia, Libby, or Faith tags you, you become the tagger. This time let’s skip. Go!
6. (After 45 seconds) Freeze!
7. When I say, “Go,” if Zera or Omar tags you, you join hands like this and you two try to tag someone. When you tag another person, they join hands with you and you become a group of three. Once you have four people on your team, you divide into two teams and continue tagging. So if I tag Kim we join hands. If we tag Hope, all three of us join hands. If we then tag Emily, we divide into two teams. Hope and Emily become their own team, and Kim and I are a team. Let’s try it. Go!

With this approach, combined with the ability to freeze students quickly, students learn the game and are active at the same time. Also, if the activity does not, as is often the case, go as expected with the first set of instructions, the staff leader can stop the activity and modify the directions.

Behavior Management

Even the best instructional practices cannot remove all behavior problems. The first step to effectively managing behavior is to have a plan so staff members know exactly how to react to various situations. What will they do if one student laughs at, or kicks, or curses at another student? What if students are talking while staff members are talking? A behavior management plan serves several purposes; one primary purpose is allowing staff members to avoid reacting and becoming emotional.

Staff members must know what consequences they can use to shape behavior, following the organization’s beliefs and policies. The process used to deliver consequences is also important. Yelling at students across the area is not appropriate. It can create a hostile environment and lead to an argument between the staff member and child in front of the rest of the group. It can humiliate the child, or, conversely,

give the child the precise reaction he or she was trying to provoke. An effective alternative is to engage the class in activity and quickly approach the child, deliver the consequences—“Emiliano, talking while I’m talking is unacceptable. Next time you’ll have to sit out”—and move away. This eliminates emotion, is private, and maintains the child’s dignity while the rest of the group remains active.

Specific Positive Feedback

There is considerable evidence on the relationship of self-efficacy to physical activity participation in youth (Beets, Pitetti, & Forlaw, 2007). Children who are confident about their ability to be active are more likely to be active. A major component of promoting self-efficacy is specific positive feedback (SPF), which is much more effective than general positive feedback. SPF tells the child specifically what you like. Rather than saying, “Nice work,” the staff member says, “Wow, nice work, Li, you are really working hard and sweating today.” Children who receive SPF may be more likely to be active and to enjoy physical activity.

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Full Participation

Effective, appropriate physical activities for youth are fully inclusive and provide ample opportunities for decision making, positive social interaction, and active participation. For instance, games that do not involve elimination facilitate active participation. In tag games, students who are tagged should not sit out or become frozen; instead, they could become the new taggers while the other students become the fleers. Generally, the students who are tagged first need more opportunities to be physically active. Eliminating them or otherwise making them stop moving does them a disservice.

Another suggestion is to provide multiple practice opportunities. Providing ample equipment and having students work individually or in pairs offer maximum opportunity for student practice and participation. If the physical activity requires groups or teams of students, use small groups of three or four people to reduce the amount of time spent waiting in lines. Relay races in which only three or four students are active at a time are discouraged. If lack of equipment means that relays with long lines are the only option, keep everyone active by requiring all participants to run in place or perform jumping jacks while one member of the team is running.

Finally, physical activities must provide positive social experiences for children. As students are working together on cooperative physical activities, ensure that each member of a group has the opportunity to lead in some fashion. For example, if an activity involves taggers or students in leading positions, stop the activity often and have students rotate roles.

Promoting Our Kids’ Health

Afterschool programs can provide a safe environment for children to engage in much-needed physical activity. With a minimal amount of training, afterschool staff can deliver curriculum-based programming that can afford children the opportunity to accumulate over half of their daily recommended minutes of moderate-to-vigorous physical activity (MVPA). Barriers to implementation are becoming more surmountable as organizations rise to meet provider demands for guidelines and resources (After School Programs Office of the California Department of Education, 2009). Though afterschool programs can no more be expected to end childhood obesity than can schools, both can contribute to decreasing obesity in a multifaceted approach (Moore, 2008).

As in any other behavioral endeavor, consistency is key. Wherever children are, they should consistently receive the message that physical activity is an important part of their wellbeing. When they are active, they should be in a supportive, safe, and enjoyable setting that promotes lifelong physical activity. If afterschool programs can adapt these recommendations to their own needs and make physical activity an essential component of the program, the children will be the ultimate winners.

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