

Increasing Students' Physical Activity Levels: Research and a Call to Action

By Daniel J. Green, Christina Economos, Megan Mueller, Nicole Schultz, Julie Gervis, Gabrielle Miller, Russell R. Pate

The research project described and this publication were inspired by the Physical Activity and Health Innovation Collaborative, an ad hoc activity associated with the Roundtable on Obesity Solutions at the National Academies of Sciences, Engineering, and Medicine (the National Academies). This publication does not necessarily represent the views of any one organization, the Roundtable, or the National Academies and has not been subjected to the review procedures of, nor is it a report or product of, the National Academies.

Increasing Students' Physical Activity Levels: Research and a Call to Action

By Daniel J. Green, Christina Economos, Megan Mueller, Nicole Schultz, Julie Gervis, Gabrielle Miller, Russell R. Pate

Imagine living in a community where elementary school kids gather in the morning to walk to school as part of a walking group organized by neighborhood parents. Imagine parents and teachers joining forces to create after-school recreation programming or in-classroom physical activity breaks for middle school students living in potentially unsafe communities. Imagine a monthly calendar posted in the lobby of your child's school that is filled with hiking outings, bicycle clubs, lunchtime intramural sports and countless other opportunities for kids of all ages.

These and other initiatives are taking place around the country in school districts that are championing efforts to provide ample physical activity opportunities for their students. These districts are bucking the trends of kids not getting enough physical activity and rising rates of obesity through creative programming, policies, and community involvement. Whether you are the local mayor, a school administrator, a teacher, or a concerned parent, everyone has a stake in improving the health and fitness of the children in their communities, as active kids typically become more active, healthier, and more productive adults.

According to the *2008 Physical Activity Guidelines for Americans*, children should engage in 60 minutes of moderate to vigorous physical activity each day, and the Institute of Medicine (IOM) (now continuing its consensus studies and convening activities as the Health and Medicine Division of the National Academies) advises that more than half of that activity be performed during the school day.^{1,2} A recent review by the Centers for Disease Control and Prevention³ also suggests an association between school-time physical activity and improved academic performance, standardized test scores and concentration, as well as better attention and classroom behavior. Unfortunately, evidence reveals a mere 42 percent of children and 8 percent of adolescents are meeting daily requirements.⁴

Despite the known benefits of providing physical activity opportunities for students, most school

districts are not meeting daily recommendations.⁵ To address this trend, the Roundtable on Obesity Solutions of the Health and Medicine Division of the National Academies of Sciences, Engineering, and Medicine launched the Physical Activity and Health Innovation Collaborative (PA IC) as an ad hoc activity. The Roundtable on Obesity Solutions is an ongoing effort to encourage multisector discussion on interventions to fight obesity, increase physical activity, and inspire healthy eating. A primary objective set by the PA IC was to use existing evidence from successful school-based physical activity programs to influence public policies and map longer-term strategies to increase physical activity in youth. As part of its activities, the PA IC inspired research, subsequently led by Russ Pate, PhD of the University of South Carolina and Christina Economos, PhD, of Tufts University, with the specific aims to:

- identify school districts across the country that demonstrated exemplary efforts to provide students with many physical activity opportunities;
- report on their activities—programs, policies, engagement, and funding;
- understand the factors that facilitated their success; and
- identify potential strategies that are already being used in districts to provide a roadmap for efforts to increase school-based physical activity nationwide.

The research project described and this publication were inspired by the PA IC. The research and the resulting publications do not necessarily represent the views of any one organization, the PA IC, the Roundtable, or the National Academies and have not been subjected to the review procedures of, nor are they a report or product of, the National Academies.

The Study

Members of the PA IC identified and nominated school districts that were recognized as being exemplary in their efforts to increase opportunities for physical activity during the school day. A total of 59 school districts were contacted across low, middle, and high socioeconomic groups and urban, suburban, and rural geographic locations. The participating districts were primarily large and urban, and most served a majority of students who were non-White and were eligible for free and reduced-price lunch. Contacts who could best speak to the physical education (PE) and physical activity programs and policies in their school district were interviewed in the summer and fall of 2015 about the types and amount of physical activity opportunities provided to students and the factors that enabled these districts to develop and maintain their programs.

The Results

Findings from interviews demonstrate these districts were, in fact, exemplary—they were more likely to have a PE requirement, more likely to have a recess requirement, and more likely to offer after-school programs compared to districts nationally. These districts were also more likely to provide ongoing

training for their PE staff, to have a staff member dedicated to overseeing their PE program at the district level, and to require schools within the district to test students' fitness levels.

Additional practices, including providing recess and implementing other school-based physical activity programs, were used to augment PE offerings and were employed in 100 percent of participating districts, with 74 percent of districts implementing a combination of all three practices (recess, after-school, and school-day physical activity offered outside of PE classes). Furthermore, many districts offered a variety of physical activity programs, with the majority offering six to 10 programs across their elementary, middle, and high schools.

At a Glance: Factors Associated with Being an Exemplary School District

- Establishing a weekly PE requirement that meets IOM recommendations¹
- Providing recess at a recommended levelⁱⁱ
- Implementing a minimum of five different school-based physical activity programs before, during, and after school to meet IOM recommendations for minutes of school-time physical activity²
- Making classroom physical activity breaks the daily norm
- Engaging advocates, or champions, in the district, schools, and in the community
- Being creative with funding—looking for no- and low-cost programs which are often readily available
- Helping facilitate partnerships with physical activity programs and community organizations

These districts attributed their success to the involvement of advocates (or champions), the funding and tangible support received, and the bidirectional partnerships formed with community members and physical activity programs. Let's look at each of these elements, exploring why respondents considered them integral to the creation, implementation, and sustainability of their efforts.

Champions

Champions are individuals or groups of individuals who are instrumental during all phases of a physical activity program, from its initial ideation forward. Champions can come from a variety of sectors. Many districts had established staff positions for PE and general physical activity programming; however, many also relied on others to step up and serve as advocates for their efforts and to help facilitate the procurement of funding and support. Having a motivated champion visiting local businesses, serving as a liaison between the school and the community, and selling the concept of a new program were seen by many districts as an integral element of the program's initial and long-term success.

Funding and Tangible Support

Some districts utilized programs that were low- or no-cost; however, all districts still required some funding and/or tangible support. Funding can come from a wide variety of sources such as grants, fundraisers, district budgets, and the local, state, and federal government. Non-monetary, tangible support can come in many forms as well, including equipment, facilities, curricula, teacher training, and general expertise, and can help reduce overall program costs.

Bidirectional Partnerships

Bidirectional partnerships originated from both the school district and an outside organization, and were sustained through the cooperation of both stakeholders. Representatives from the school district, whether they were the director of PE and health, school board members, PE teachers, or a group of concerned parents, reached out to program officials or attended conferences to learn more about a program. Alternatively, program officials also reached out to school districts to offer free trials or equipment, followed by more long-term cooperation. The types of bidirectional partnerships revealed during interviews range from hospitals and local businesses to recognized programs such as GoNoodle® and PlayWorks®.

contribute to the creation, implementation, and sustainability of physical activity programs.

Program Creation

District programs were developed using a bottom-up/grassroots approach—such as when students, school staff, or community champions drove the effort—as well as a top-down approach, where the program was developed by leadership at the district level. Champions played a fundamental role in program development and were often involved in grant writing, coordinating and advocating for the program, fostering relationships in the community, and fundraising. Several districts commented on the importance of district leadership buy-in to building and maintaining enthusiasm for PA programs:

“The biggest barrier is shifting the culture and mindset of the staff; an enthusiastic superintendent helped to overcome this barrier.”

Some programs were also developed in response to grant funding or an outside physical activity program such as PlayWorks® reaching out to the district directly to offer either equipment or a trial of their program. Additional program ideas came from external champions and conferences. External funding informed program development, but less often—in only five of the districts.

Implementation

For many districts, having strong champions, partnerships, and funding and tangible support were key factors in program implementation. Champions and external organizations provided support or advocacy for the program. Funding was required to implement many, but not all, programs. The biggest barriers to obtaining start-up funding were budgetary issues, difficulties in receiving grant money, and competing priorities within the district (academic vs. health); a number of districts pointed to the need for innovative solutions to budget constraints:

“Community-school district partnerships allow for some training to occur at no cost. For example, Zumba® instructors provide professional training for certified staff.”



Putting Evidence into Practice

This section explores how champions, funding and tangible support, and bidirectional partnerships

Sustainability/Evaluation

Champions were repeatedly cited as being a key part of the long-term continuation and development of programs, often in the form of continued advocacy and funding efforts. Having a supportive board of education and superintendent was also essential for these districts. District champions also aimed to create a culture of health and wellness in their districts, noting the importance of a culture shift to support long-term sustainability:

“The district had to cut a significant amount of funding from the budget, but they did not cut any physical activity program [funding] because of the strength of the program.”

Conclusions

The findings presented here demonstrate that school districts can provide substantive physical activity opportunities to students, despite differences in district size, the availability of resources, and socioeconomic status. The study team identified three overarching and broadly relevant themes that enhanced physical activity opportunities for students: champions, funding and tangible support, and bi-directional partnerships. Not only were the three themes critical for the development of physical activity opportunities for students, but each theme also remained important for the implementation, evaluation, and sustainability of programs.

Furthermore, each theme supported the development of a culture of health within the schools and districts, which can be broadly defined as an environment that supports good health and well-being. A culture of health can be enhanced and maintained by a superintendent or upper-level leadership that identifies physical activity for students as a district priority. In this study, districts who identified the superintendent as a champion consistently emphasized the importance of this upper-level leadership in the success of their programs. Support from upper-level

leadership within the district often coincided with a funded position for a lead champion for physical activity programmatic efforts, which facilitated the acquisition of funding and tangible support for programs, as well as the development and maintenance of bi-directional partnerships. As such, the synergistic effects of the three identified themes were enhanced by district leadership that prioritizes physical activity for students and supports a lead physical activity champion.

A Call to Action

Sometimes the right ingredients are present in a community—either by luck or deliberate action—to create an environment that allows for physical activity. Unfortunately, some areas simply make it more difficult for youth to get adequate exercise in their daily routines, such as urban communities with unsafe parks or rural areas that lack sidewalks or bike lanes. That is why, says Dr. Economos, deliberate action is often needed to get kids moving and create a culture of health.

Regardless of your position in the community—mayor, teacher, parent, small business owner, or one of countless other integral elements of a community—you can be a champion for the children in your school district. Dr. Economos reminds you to be creative and pursue your passion when thinking of ways to become more involved. “Don’t be reluctant about adding a new option, and don’t be afraid to step up and share your passion,” she says. Remember, the key to success is the introduction of a variety of options, so all ideas are valid, even if there is some overlap and redundancy.

One final call to action from the research team: The data show that kids become less and less active as they move from elementary to middle to high school. Therefore, we must find ways to inspire older kids who do not play organized sports to stay physically active. Be creative, get involved, and share your passion for physical activity with the youth in your community. In other words, be a champion.



References

1. Physical Activity Guidelines for Americans Midcourse Report Subcommittee of the President's Council on Fitness, Sports & Nutrition. Physical Activity Guidelines for Americans Midcourse Report: Strategies to Increase Physical Activity Among Youth. US Department of Health and Human Services. Washington, DC: 2012.
2. Institute of Medicine (IOM). Educating the Student Body: Taking Physical Activity and Physical Education to School. The National Academies Press. Washington, DC: 2013.
3. Centers for Disease Control and Prevention. The Association Between School Based Physical Activity, Including Physical Education, and Academic Performance. US Department of Health and Human Services. Atlanta, GA: 2010.
4. Troiano RP, Berrigan D, Dodd KW, Mâsse LC, Tilert T, McDowell M. Physical activity in the United States measured by accelerometer. *Med Sci Sports Exerc*. 2008; 40(1): 181-188.
5. Lee SM, Nihiser AJ, Fulton JE, Borgogna B, Zavacky F. Physical education and physical activity. In: Centers for Disease Control and Prevention. Results from the School Health Policies and Practices Study 2012. US Department of Health and Human Services and Centers for Disease Control and Prevention. Atlanta, GA: 2013.
6. Centers for Disease Control and Prevention and Bridging the Gap Research Program. Strategies for Supporting Recess in Elementary Schools. US Department of Health and Human Services. Atlanta, GA: 2014.
7. Council on School Health. The crucial role of recess in school. *Pediatrics*. 2013; 131(1): 183-188.

¹The IOM classifies high-quality physical education programs by 1) instruction by certified physical education teachers, 2) a minimum of 150 minutes per week for elementary students and 225 minutes per week from middle and high school students, and 3) tangible standards for student achievement and high school graduation.²

^{6,7}The Centers of Disease Control and American Academy of Pediatrics recommend students receive at least 20 minutes of recess daily.^{6,7}

This paper was authored by the individuals as listed (Daniel J. Green, Christina Economos, Megan Mueller, Nicole Schultz, Julie Gervis, Gabrielle Miller, Russell R. Pate). The research project described and this publication were inspired by the Physical Activity and Health Innovation Collaborative, an ad hoc activity associated with the Roundtable on Obesity Solutions at the National Academies of Sciences, Engineering, and Medicine (the National Academies). This publication does not necessarily represent the views of any one organization, the Roundtable, or the National Academies and has not been subjected to the review procedures of, nor is it a report or product of, the National Academies.