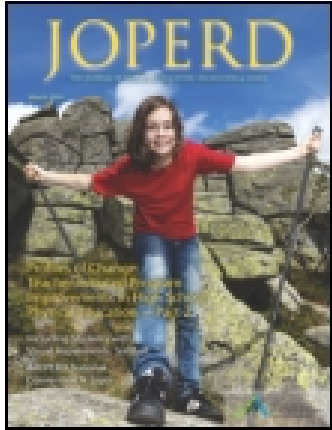


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PASS: Creating Physically Active School Systems

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PASS:

CREATING *Physically Active* School Systems

CAROL M. CIOTTO
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Physically Active School Systems (PASS) are a comprehensive, system-wide initiative through which school districts in the state of Connecticut utilize opportunities for school-based physical activity that is embedded throughout the school day and can be broken down into four integral parts. However, a quality physical education program taught by a licensed physical educator must be at the core of PASS. The physical educator needs to become the physical activity director within the school, taking the lead to ensure that appropriate, age-related educational programming is in place to obtain PASS goals. Furthermore, PASS must

be maintained, monitored, and assessed by the physical educator as the physical activity director. In order to create PASS, school districts should implement an action plan (Figure 1) that addresses the following components: (1) quality physical education programs, (2) before-school physical activity, (3) during-school

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Figure 1.
PASS action plan

| In Progress | Opportunities for Implementation | Physical Activity (What you're doing) | Adding This Year | Physical Activity (What you will do) | Adding Next Year | Physical Activity (Future plans) |
|-------------|----------------------------------|---------------------------------------|------------------|--------------------------------------|------------------|----------------------------------|
| | <i>Before/After School</i> | | | | | |
| | <i>During School</i> | | | | | |
| | <i>Recess/Lunch</i> | | | | | |
| | <i>Physical Education</i> | | | | | |
| | <i>Family/Home</i> | | | | | |
| | <i>School/Community Events</i> | | | | | |

Instructions:

1. Check the appropriate box that indicates where you or your colleagues are currently providing opportunities for physical activity
2. List the types of opportunities you are currently providing
3. Repeat steps 1 and 2 for this year and next year

physical activity, (4) after-school physical activity, and (5) family- and community-based physical activity. The purpose of this article is to help all educators understand and be able to feel comfortable using the powerful tool of movement to enhance students' physical, emotional, spiritual, and cognitive abilities. The PASS initiative can be implemented in school systems everywhere by addressing the four Cs: connect, cooperate, collaborate, and communicate.

The Four Cs

Connect. The first integral part of PASS is to have an understanding of the important connection that exists between mind and body. Making this connection is crucial to the success of the PASS initiative and more globally to have an impact on childhood obesity. The positive effects of connecting physical activity to learning have been around for many years (Sallis & Patrick, 1994; U.S. Department of Health and Human Services [USDHHS], 2000). However, it was not until Ratey (2008) published his book *Spark: The Revolutionary New Science of Exercise and the Brain* that we have begun to take notice.

Cooperate. The second integral part of PASS involves the cooperation among administrators (superintendents and principals), faculty (classroom teachers, physical educators, and other "special" subject areas), parents, and children. Administrators need to be supportive of training classroom teachers so they are comfortable implementing informal, formal, and content-rich physical activities in the classroom. They also need to recognize the importance of daily, quality physical education programs. These types of comprehensive programs not only provide health benefits for students but can also reinforce the classroom curriculum through such programs as the ABCs of Fitness (Katz, 2007) and Action-Based

Learning (Blaydes, 2000). There needs to be support of and cooperation among these groups in order for PASS to be successful.

Collaborate. The third integral part of PASS involves collaboration among legislators, institutions of higher education, community leaders, school administrators, and parents. Legislators need to provide opportunities for grants and service-learning projects throughout their districts. Colleges and universities need to prepare their preservice teachers to not only understand the benefits of physically active classrooms but also to effectively implement a physically active program in their student-teaching placement and eventually in their full-time employment. Partnering with organizations (e.g., parks and recreation departments, youth development organizations, local governments, health service providers, faith-based organizations, parents) can build communities around good nutrition and positive, inclusive physical activity. Legislators need to provide policy change, incentives, resources, guidance, and support to this end.

Communicate. Finally, the fourth integral part of PASS, related to the idea that "it takes a village to raise one healthy child," is a mass communication effort to craft the message and image of physical activity, physical education, and physically active learning as an expectation and a right! Everyone involved must advertise the good news regarding physical activity and learning and the cooperation and collaboration that is taking place among the schools, community leaders, legislators, parents, and students for the success of PASS. Quality, comprehensive school physical education programs (CSPAP) are a must and a good start, but past experiences have shown that they are not enough on their own. Physically active classrooms, before- and after-school programs, community outreach programs, and parks and recreation programs all have to work together to provide the most optimum experiences for children and adults to participate in physical activities.

Responsibilities of Stakeholders

In order for PASS to be successful, “school districts and schools should utilize all opportunities for school-based physical activity to develop physically educated students who participate in the nationally-recommended 60+ minutes of physical activity each day and develop the knowledge, skills, and confidence to be physically active for a lifetime” (American Alliance for Health, Physical Education, Recreation and Dance, 2013, p. 1). School districts need to make the commitment to become a physically active school system through collaboration with the stakeholders. The roles and responsibilities of the key stakeholders should be addressed. These individuals must have a vested interest in PASS. The best approach is to include representatives from the key stakeholders such as school board members, administrators, school faculty and staff, students, family, and community partners. The roles and responsibilities for these groups are listed as follows:

School Boards

- Provide leadership
- Provide equipment, resources, and appropriate facilities
- Provide key stakeholders opportunities for input in the PASS initiative
- Provide staff training
- Provide appropriate funding to support PASS
- Provide administrators, faculty, and staff with ongoing support
 - Develop partnerships with community organizations
 - Become role models for all children
 - Understand the benefits of physical activity
 - Advocate for the PASS initiative

Administrators

- Show commitment to the PASS initiative
 - Create a positive and supportive environment for the PASS initiative
 - Collaborate with the school board, faculty, and staff to support the PASS initiative
 - Monitor faculty’s implementation of the PASS initiative
 - Provide support and resources to assist teachers in the implementation of the PASS initiative
 - Participate in the PASS initiative
 - Communicate with the school board, faculty and staff, students, parents, and the community
 - Provide opportunities for input from the school board, faculty and staff, students, parents, and the community
 - Become role models for all children
 - Understand the benefits of physical activity
 - Advocate for the PASS initiative

Faculty and Staff

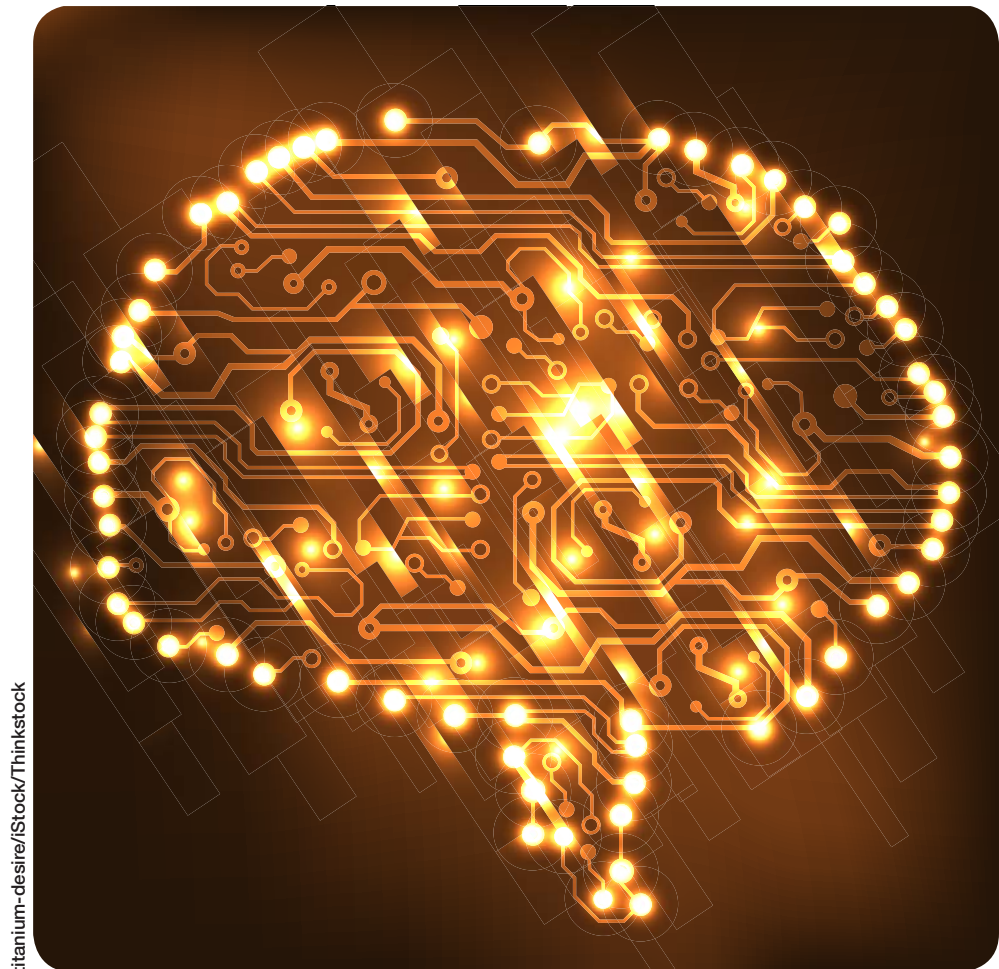
- Show commitment to the PASS initiative
- Monitor and assess the progress of the PASS initiative
- Create a positive and supportive environment for students’ involvement in the PASS initiative
 - Provide appropriate inclusive activities for all students to implement the PASS initiative
 - Provide opportunities for feedback and input from students
 - Become role models for all children
 - Understand the benefits of physical activity
 - Advocate for the PASS initiative

Students

- Show commitment to the PASS initiative
- Actively participate in PASS activities
- Become role models at school, home, and in the community
- Identify the benefits of physical activity
- Advocate for the PASS initiative

Family

- Understand and support the PASS initiative
- Provide input and feedback for the PASS initiative
- Provide opportunities for family involvement in physical activity at home
 - Become a role model for their children
 - Participate in the PASS initiative
 - Advocate for the PASS initiative



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Educators have to change the nation's story from one about the detrimental effects of a sedentary lifestyle to one about improved health and performance beginning with physical activity as the base of the pyramid.

Community Partners

- Support the PASS initiative
- Provide input and feedback regarding the PASS initiative
- Create partnerships with the school board for facility and equipment usage
 - Provide appropriate training, resources, and funding for implementation of the PASS initiative
 - Align existing organizational goals and/or initiatives with the PASS initiative

The PASS initiative should be structured using a top-down and bottom-up approach, and facilitated with care in order to provide stakeholders with the opportunity to connect, communicate, cooperate, and collaborate for ultimate success in a physically active school system.

Making the Connection between Mind and Body

Having a solid understanding of the benefits of PASS and why it is needed will help all stakeholders to make important connections between mind and body in order to make a lasting commitment for creating a physically active environment. Being physically active is important for combating hypokinetic diseases and certain types of cancer (USDHHS, 1996). We can now add to the long list of benefits of physical activity increased cognition, focus, and overall readiness to learn.

Although it is important that high-quality physical education programs exist within a school, it is a first step to solving the childhood obesity problem and how sedentary our nation has become. The current structure of the school day needs to be addressed. With all the research being done about the effects of physical activity on focus, cognition, and readiness to learn (Castelli & Beighle, 2007; Mitchell & Scheir, 2003; Ratey, 2008), and armed with the fact that aerobic activity can actually help create new neurological pathways (Ratey, 2008), we now have proof that fit kids have improved cognition. According to Shlaes (2012), sitting for extended periods of time (20+ minutes) affects neurological development, interferes with students' health, and slows learning. The importance of making the connection between the mind and body cannot be overemphasized. How the information is disseminated is

where the problem lies. History tells us that using the doom and gloom approach, the threat of disease, or even focusing on staving off diseases does not work. Educators have to change the nation's story from one about the detrimental effects of a sedentary lifestyle to one about improved health and performance beginning with physical activity as the base of the pyramid. Our social, emotional, and spiritual health depend on our physical health.

In order to understand the connection between the mind and the body, educators need to fully comprehend what physical activity is and what the benefits are of embedding it throughout the day. According to Blaydes (2000), there are three types of movement that need to be addressed when reviewing brain research: (1) movement, (2) physical activity, and (3) exercise. Movement is the navigation of one's environment. Physical activity is any movement of the skeletal muscles that expends energy. Exercise is physical activity that is planned and repetitive, with an increase in physical fitness as the goal. The two aspects of movement that benefit learners most are physical fitness and the use of kinesthetic activities to anchor academic concepts resulting in cognitive reinforcement. According to Blaydes (2000), "Movement prepares the brain for optimal learning" (p. 2).

Early research dealing with physical activity and cognition showed that physical activity enriches the learning environment; physical fitness is positively related to academic performance, and aerobic fitness aids cognition (Diamond, 1998; Gardner, 1983; Jensen, 2000; Kempermann & Gage, 1999). More recent research has documented the positive benefits that physical activity and exercise have on cognition. Ratey (2008) began prescribing various types of physical activity and exercise to his patients as treatment for everything from anxiety, stress, and depression to Alzheimer's disease. He also researched the effect of aerobic exercise on academic performance. With regular and prolonged aerobic activity, such as brisk walking or bike riding, new neurological pathways in the brain were created that benefited old and young alike.

Movement differentiates instruction; increases retention, motivation, attention, and engagement in the learning process; and should be utilized for its full potential benefits in both the classroom and in the gymnasium (Lengel & Kuczala, 2010; Ratey, 2008). SHAPE America – Society of Health and Physical Educators stated, "The research confirms that students form better in school when they are emotionally and physically healthy. They miss fewer classes, are less likely to engage in risky or antisocial behavior, concentrate more and attain higher test scores" (National Association for Sport and Physical Education [NASPE], 2011, p. 1).

Exercise is also of extreme importance because it improves learning on three levels: (1) it optimizes the mindset to improve

Table 1.
Resources for Physical Activity Before and After School

- Afterschool.gov (www.findyouthinfo.gov)
- Afterschool Counts! (www.theafterschoolproject.org)
- BAM: Body and Mind (www.cdc.gov/bam)
- Fit for Life After-School Program (www.fit4lifeny.com)
- Games Kids Play (www.gameskidsplay.net)
- Joint Use (www.jointuse.org)
- Kidnetic (www.kidnetic.com)

Table 2.
Brain-break Resources for Classroom Teachers

- Lesson Ideas Active Academics (www.activeacademics.org): Provides practical ideas for integrating physical activity with K–5 math, reading and language arts, health and nutrition, and physical education classes.
- Take 10 (www.take10.net/whatistake10.asp?page=new): Offers a searchable database of classroom-based physical activity lessons for K–5.
- Activity Bursts for the Classroom (www.davidkatzmd.com/abcfornfitness.aspx): Shows elementary schools how to restructure physical activity into multiple, brief episodes throughout the day without taking away valuable time from classroom instruction.
- Brain Breaks (www.emc.cmich.edu/brainbreaks/): Provides physical activity lessons for K–6 classrooms. The lesson menu is broken into specific content areas and other settings.
- Energizers (www.ncpe4me.com/energizers.html): Classroom-based physical activities for grades K–8 that integrate physical activity with academic concepts.
- Winter Kids Outdoor Learning Curriculum (www.winterkids.org): Aligned with National Education Standards, it offers interdisciplinary lessons in a variety of subjects for grades K–12 with a complete adapted component for children with disabilities.
- Action Based Learning (<http://www.actionbasedlearning.com/>): Puts brain-based learning into action with teacher-friendly, “kid-tested, kid-approved” strategies that move students to learn.
- Brain Rules (<http://www.brainrules.net>): A multimedia resource detailing 12 key rules scientists know about how the brain works. For each brain rule, Dr. John Medina presents the science and then offers ideas for investigating how the rule might apply to our daily lives, especially at work and school.
- ABC for Fitness (<http://www.davidkatzmd.com/docs/ABCManual.pdf>): Shows schools how to restructure physical activity into multiple, brief episodes of activity into classrooms throughout the day.

alertness, attention, and motivation; (2) it prepares and encourages nerve cells to log in new information; and (3) it spurs the development of new nerve cells from stem cells in the hippocampus (Ratey, 2008). By addressing the need for more physical activity during the school day and its positive effect on cognition, attendance, and behavior, society could begin to see the possibility of an end to the problems of childhood obesity, type 2 diabetes, and declining test scores (Cotman & Engresser-Cesar, 2002; Kelly, Kelly, & Franklin, 2006).

Physical Activity Before, During, and After School

A quality physical education program needs to be the basis for PASS, which includes a planned sequential program that is based on state and/or national physical education standards and guidelines (SHAPE America, 2014), where all students develop the necessary skills and knowledge to acquire and sustain a physically active lifestyle. In order to achieve this, quality physical education programs should be taught by state-certified physical education teachers and should meet the national minimum recommendations for physical activity (150 minutes per week for elementary students and 225 minutes per week for middle and high school students; NASPE, 2011). Physical education programs should optimize moderate-to-vigorous physical activity to facilitate retention, concentration, and behavior. Light physical activity as an attention-reset tool can also be utilized in the classroom. Moderate physical activity creates lasting effects for up to 60 minutes and should be implemented during physical education and recess. Finally, engaging in vigorous physical activity results in initial fatigue, but the effects last longer and should be incorporated into physical education, structured recess, and before- and after-school programs (Mahar, 2011). Examples of these types of activities can be found in the

2008 Physical Activity Guidelines for Americans (www.health.gov/paguidelines).

Before- and after-school physical activities should include, but not be limited to, opportunities for all students to participate in unstructured and structured physical activity and to practice skills and concepts learned in physical education. (Table 1 provides resources for incorporating physical activity before and after school.) These types of activities promote cooperation, collaboration, and problem-solving skills. In addition, these activities improve attention and concentration for classroom learning and can contribute significantly to increased cognition (Dwyer, Sallis, Blizzard, Lazarus, & Dean, 2001; Ratey, 2008). Some examples include intramural sports, family fitness nights, the walking school bus, and bike-to-school programs.

Educators need to make the important connection between the brain and the body. Physical activity during school reinforces the link between the classroom curriculum and movement. It facilitates retention, concentration, and positive behavioral attributes. There are three types of physical activity that can be embedded throughout the school day. The first is content-rich activities that directly link the curriculum to movement and anchor learning. Brain breaks, which might include cross lateralization and rhythmic activities, can help stimulate the brain and prepare it for learning. An excellent example of this is *The Brain Dance* (Gilbert, 2000). The final types of physical activities are just plain fun. They do not necessarily link to the curriculum but can help students to refocus, reengage, and reinvigorate their desire to learn (see Table 2 for brain-break resources).

Family and community support should play a critical role in getting children and adolescents participating in physical activity beyond the school day. They can act as positive role models by engaging in physical activity themselves to promote lifelong physical activity in their children. Families should try to incorporate physical activities into their daily routines and engage in local school

Table 3.
Walk and Bike to School Resources

- CDC Walk to School Program (www.walkbiketoschool.org)
- International Walk to School Program (www.iwalktoschool.org)
- Safe Routes to School (www.saferoutesinfo.org) (<http://saferoutespartnership.org/>)
- Safe Kids Worldwide (www.safekids.org/international-walk-school-day)

Table 4.
Connecticut PASS Examples

An initial connection was made between the authors and Marcia Phelps of Hatton Elementary School in Southington, CT. Communication transpired between these key players and the superintendent of schools in Southington to create an action plan and a timeline for making PASS a reality (Figure 1). The beginning phase of the action plan took place with PASS training for classroom teachers at Hatton Elementary School, along with several employees and the director of the Southington YMCA. Training has continued with the K–8 physical education teachers to become the PASS coordinators at their respective schools. Additional training is scheduled for all K–5 classroom teachers and administrators so that all K–5 elementary schools in Southington will be ready to begin implementing PASS before, during, and after school. The YMCA has played a critical role in providing funding to support training resources and materials for the implementation of PASS in Southington thus far.

Other examples of physically active districts are represented by the following best practices:

- East Hartford, CT: Physical activity breaks prior to testing at the elementary level.
- Hamden, CT: ABC for Fitness implemented in two 3rd-grade classrooms in Bear Path and West Woods.
- Hartford, CT: Activity Works in K–4 classrooms.
- Portland, CT: Content-rich classroom activities and brain breaks in high school English classes.
- Region 10, Burlington, CT: Classroom energizers at the high school level.
- Ridgefield, CT: Brain breaks, energizers, and content-rich activities in K–2.
- Wallingford, CT: Action-Based Learning labs in seven of the eight elementary schools.
- West Hartford, CT: Classroom energizers at Charter Oak International Academy.

and community physically active events. Communities should provide a variety of opportunities for their members to be physically active and should work with schools to increase and promote physical activity engagement. They should also collaborate with other local organizations to promote and host events that advocate for a physically active community. Examples might include family fun runs, health and wellness fairs, and active transport.

Schools and communities can provide a variety of strategies and approaches to help students become more physically active, including increasing access to physical activity for all students to be physically active not just during physical education class but throughout the day. Students can get most of their physical activity through a quality physical education program that is complemented by activities before, during, and after school; during recess, physical activity breaks, intramural programs, and interscholastic sports; walking or biking to and from school (Table 3); and participating in community- and family-based physical activity. Communities and schools play a key role in shaping the social and physical development of their students. The authors have developed the PASS model for the state of Connecticut, which is being implemented in various ways within several school districts and can be used as a model. See Table 4 for specific examples of how PASS is taking shape in Connecticut.

Conclusion

Many know the health-related benefits associated with being physically active, and now the field of exercise science can add brain power to the long list of tried-and-true benefits. Ratey (2008) refers to the good news as a revolution, so let us take up the cause and raise our heart rates, put our heads together, and pull out all the stops to give children the best chance to be smart, healthy, contributing members of society by providing them with a truly interdisciplinary, holistic education.

It can be challenging to motivate students, especially when it comes to a lifestyle change. The most effective way to instill change is to make it simple and attainable. By embedding physical activity as a part of the school's culture before, during, and after school, children will more likely adopt it as a part of their everyday behavior. By providing opportunities for physical activity throughout the school day, students can bring this new behavior home and into the community so we can all learn the importance of healthy behaviors while improving cognition and academic success. The solution begins and ends with the decisions we make. Children are not getting as much physical activity as they should, despite the many benefits. It is important to establish good physical activity habits as early as possible. So how do we do that? By making physical activity and quality physical education part of the school's culture throughout the day, every day. It is critical that educators take the steps now to make a change in students' lives and help them lead a healthier, more productive life.

In conclusion, in order to reach the goals of PASS it is critical to begin with a quality physical education program, taught by a licensed physical educator. It is also a must to make the important connection between the mind and body. We must communicate the message of increased physical activity, physical education, and physically active learning as an expectation and a right. Cooperation and collaboration must occur between and among key stakeholders in order to develop, implement, monitor, and assess for PASS to be successful.



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