



# STRATEGIES FOR RECESS IN SCHOOLS

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## Introduction

The [2008 Physical Activity Guidelines for Americans](#) recommends that children and adolescents engage in 60 minutes of physical activity each day.<sup>1</sup> Being physically active can improve strength and endurance; help build healthy bones and muscles; help control weight; reduce anxiety, stress, and depression; improve [academic achievement](#); and increase self-esteem for children and adolescents.<sup>1,2</sup>

Recess can help students increase their daily physical activity and contribute to getting the recommended 60 minutes of physical activity each day.<sup>2-4</sup> Recess also is an essential part of students' school experience that contributes to their normal growth and development. Recess helps students practice social skills (e.g., cooperation, following rules, problem-solving, negotiation, sharing, communication), positively engage in classroom activities (e.g., being on-task, not being disruptive), and enhance cognitive performance (e.g., attention, memory).<sup>2-4</sup>

This document, [Strategies for Recess in Schools](#), describes strategies for planning and providing recess in schools to help increase participation in physical activity and improve [academic achievement](#) (e.g., performance, behavior, attention). The audiences for this document include state and school district leaders that provide technical assistance and professional development on recess, physical education teachers, classroom teachers, recess and playground supervisors, support staff, school administrators, parent-teacher organizations, school health coordinators, school health advisory councils, parents, and anyone interested in supporting recess in schools. While each of these representative groups may have different roles and responsibilities in garnering support for and implementing these strategies, involvement of all groups is important.

## Development of This Document

The strategies recommended in this document are based on an environmental scan of recess in schools conducted by the Centers for Disease Control and Prevention (CDC) and SHAPE America—Society of Health and Physical Educators. This scan included a review of published peer-reviewed articles, guidelines, reports, and resources from government agencies and nongovernmental organizations. Development of these strategies also was guided by the opinions of almost 30 expert researchers, public health and education practitioners, and nongovernmental organizations that focus on recess. These opinions were gathered through key conversations and the review of early drafts of this document.

In addition, the strategies were discussed and reviewed by more than 50 physical educators, school administrators, and stakeholders (e.g., classroom teachers, school nurses, school district wellness supervisors, health department staff) who attended a workshop on Recess in Schools at the 2016 SHAPE America Convention in Minneapolis, Minnesota.

A limited number of studies have evaluated the effect of recess on physical activity and the different aspects of academic [achievement](#). Therefore, many of the strategies suggested in this document are recommended on the basis of practitioners' experience. Strategies were included only if experts consulted believed the following:

- A logical connection existed between the strategy and the implementation of recess.
- The strategy was consistent with national recommendations and standards of practice, feasible for most schools to implement, and highly unlikely to be harmful to students.



## Recess Defined

Recess has been highlighted as an important part of an active school environment (also known as a [comprehensive school physical activity program](#)) by providing physical activity to students during the school day in addition to physical education and classroom physical activity.<sup>4</sup> Recess is defined as a regularly scheduled period within the school day for physical activity and play that is monitored by trained staff or volunteers.<sup>3,4</sup> Recess periods should not be a replacement for physical education classes.<sup>2-5</sup>

Recess is a period of time when students are encouraged to be physically active and engaged with their peers in activities of their choice, at all grade levels, kindergarten through 12<sup>th</sup> grade.<sup>3,5</sup> Although these physical activity periods may not always be called recess in secondary schools, they serve the same purpose—to provide student-selected opportunities to engage in physical activity and take a break from academic work during the school day.

Middle and high schools are integrating recess or physical activity periods in creative ways throughout the school day.<sup>6</sup> These physical activity periods can be led by teachers or students. They allow students to connect with each other and teachers in new ways, fostering greater connectedness to the school community. Physical activity during exploratory programs, midmorning breaks, and lunchtime intramural activities, or as part of physical activity clubs, are all forms of recess in secondary schools.

## Benefits of Recess

Students who are physically active tend to have better grades, school attendance, classroom behaviors, and cognitive performance.<sup>7,8</sup> Schools can offer opportunities for students to be physically active,<sup>4</sup> and one of these opportunities is recess.

Recess in schools benefits students by:

- Increasing their level of physical activity.<sup>7,8</sup>
- Improving their memory, attention, and concentration.<sup>7,8</sup>
- Helping them stay on-task in the classroom.<sup>7-9</sup>
- Reducing disruptive behavior in the classroom.<sup>7-9</sup>
- Improving their social and emotional development (e.g., learning how to share and negotiate).<sup>3,9,10</sup>

Although most of the evidence is focused on elementary schools, both middle and high school students can benefit from having physical activity periods in addition to physical education and classroom physical activity.<sup>11,12</sup> These benefits and opportunities are particularly important for students with special needs, functional limitations, or physical disabilities because they may have more behavioral issues and limited experiences interacting socially with other students.<sup>13-16</sup>

Recess that is well-organized will include, for example, a written school recess plan, coordinated schedules and transition times, and professional development for school staff and volunteers. When implemented properly, recess will not only help students be more physically active, but may improve their behavior and attention level in class.<sup>8,9</sup> It can also reduce bullying and exclusionary behavior among students.<sup>8,9</sup> By helping students feel safe and more engaged in the classroom, recess also contributes to higher levels of school connectedness.<sup>17,18</sup> This higher level of connectedness creates a positive school climate, which affects every aspect of school, including attendance, engagement, and academic achievement.<sup>17,18</sup>





## National Guidance for Recess

CDC, SHAPE America, and other national organizations recommend giving elementary school students at least 20 minutes of recess daily and providing middle and high school students with a period of daily physical activity in addition to physical education and classroom physical activity.<sup>2,3,5,11</sup>

Guidance for recess includes the following:<sup>2,3,5,11</sup>

- Prohibiting the replacement of physical education with recess or using recess to meet time requirements for physical education policies.
- Providing schools and students with adequate spaces, facilities, equipment, and supplies for recess.
- Ensuring that spaces and facilities for recess meet or exceed recommended safety standards.
- Prohibiting the exclusion of students from recess for disciplinary reasons or academic performance in the classroom.
- Prohibiting the use of physical activity during recess as punishment.
- Providing recess before lunch.
- Providing staff members who lead or supervise recess with ongoing professional development.

The 2016 [\*Shape of the Nation\*](#) report identified only eight states that have policies requiring daily recess in schools.<sup>19</sup> Regardless of state policies, most elementary schools are meeting the national guidance for daily recess, although these policies could be stronger and more comprehensive.<sup>20</sup> Unfortunately, this information is unknown for middle and high schools.

## Considerations for Recess

Schools have the potential to develop an infrastructure that creates daily opportunities for students at all grade levels to experience physical activity or play at school and create balance in the school day. School staff can work with the principal or other school administrators to examine how the school addresses recess. As part of the process of planning for recess, perceived barriers should be discussed and all stakeholders—teachers, administrators, parents, and students—should be educated about how recess will support the school’s primary goals of keeping children safe and healthy and meeting their learning needs.

Each school is unique, and one prescribed plan for recess will not be appropriate for all schools. The strategies recommended in this document are not in order of priority and are not intended to be an exhaustive list. Some of the strategies are small changes in school processes that can be accomplished in the short-term with relative ease. Others are broader, longer-term goals that may require administrative or budgetary changes.

Individual school districts and schools should determine which strategies are most feasible and appropriate based on the needs of the school, school level (elementary, middle, or high school), and available resources. Schools also should assess their efforts to improve or enhance recess and physical activity periods in schools to learn which strategies might have the greatest impact.



# Strategies for Recess in Schools

This document identifies five broad categories of strategies for schools to consider to improve recess (see Figure). They are:

1. Make leadership decisions.
2. Communicate and enforce behavioral and safety expectations.
3. Create an environment supportive of physical activity during recess.
4. Engage the school community to support recess.
5. Gather information on recess.

Each category includes strategies that can be implemented by school staff or groups in the school that are responsible for leading recess. A total of 19 strategies were identified under the five categories. These strategies are an integral part of recess planning and should result in increased physical activity, positive behavior during recess, and improved behavior and engagement in the classroom.

Although most of the evidence and expert opinion for these strategies came from elementary schools, many of the strategies are applicable to secondary schools. The intent is for school staff or groups working with schools to identify what is currently happening or not happening with recess in their school, and then use this information to develop a recess plan that serves all students.

Figure. Strategies for Recess in Schools





## Strategies for Category 1

1. Identify and document recess policies.
2. Put documented recess policies into practice and revise as needed.
3. Develop a written recess plan.
4. Designate spaces for outdoor and indoor recess.
5. Establish weather guidelines to ensure student safety.
6. Train school staff and volunteers for recess.



## Category 1: Make Leadership Decisions

Leadership and organization is needed to develop a schoolwide recess plan. Initial steps include examining existing recess policies and practices, identifying ways to strengthen them, and determining which strategies are needed for implementation. Schools are then able to ensure recess is consistently organized for all students.

1. **Identify and document recess policies.** Schools can determine if their recess policies align with the seven key policies in SHAPE America's [Guide for Recess Policy](#).<sup>5</sup> They also can ensure that these policies are documented in their [Local School Wellness Policy](#), which is one of the strategies recommended to improve recess.<sup>21</sup> Schools can consider ways to revise existing recess policies to strengthen them or include additional policies to make them more comprehensive.
2. **Put documented recess policies into practice and revise as needed.** Many state, school district, and school policies are not put into practice. Simply having a policy is not enough. Schools must ensure that they are accountable to parents, students, and others in the community by implementing their recess policies. [New federal requirements](#) aim to hold districts accountable for monitoring implementation of local school wellness policies.<sup>22</sup> These policies can be routinely reviewed and revised on the basis of new evidence and guidance. Schools also can use CDC's [School Health Index: A Self-Assessment and Planning Guide](#) to identify strengths and gaps in policies and practices for recess.<sup>23</sup>
3. **Develop a written recess plan.** Another way to ensure that recess policies and practices are being properly implemented is to develop a plan. This plan identifies who will make decisions about recess and lead the implementation process.<sup>24</sup> It addresses the school's philosophical approach to recess and how it is organized. It can also address the strategies identified in this document and describe how school staff will be accountable for implementing the plan.
4. **Designate spaces for outdoor and indoor recess.** Every school should designate spaces where recess will be conducted and communicate to staff and students which grade levels will use them.<sup>2,3</sup> Schools also must ensure that the assigned recess locations do not interfere with physical education or other classes. Although recess should be conducted outside when possible, indoor spaces also can be designated so that students have recess on days with inclement weather or when they cannot go outside for other reasons (e.g., construction, safety concerns).<sup>2,3</sup>
5. **Establish weather guidelines to ensure student safety.** Schools should establish and provide guidance about unsafe conditions for recess during inclement weather. Weather conditions that expose students to extreme heat or cold are considered environmental hazards and can be harmful to students' health.<sup>25</sup> Guidance on this issue should be communicated to all school staff, parents, and the entire school community, so that students are safe and properly prepared for weather conditions.
6. **Train school staff and volunteers for recess.** Every school staff member and volunteer responsible for supervising recess needs annual professional development.<sup>2,9</sup> Recess supervisors can be trained on the established rules, protocols, and expectations for staff and students during recess. They can learn strategies and activities for recess, such as how to use physical activity zones and play equipment. They should also be trained to identify students with specific medical conditions and limitations, deal with medical emergencies, engage students in physical activity, and promote positive behaviors during recess.



## Strategies for Category 2

7. **Establish and communicate behavior management strategies.**
8. **Teach conflict resolution skills.**
9. **Ensure that recess spaces and facilities meet recommended safety standards.**



## Category 2: Communicate and Enforce Behavioral and Safety Expectations

Using rules, protocols, and expectations during recess helps ensure that students behave better, know how to deal with conflict, and are safe during recess. Establishing safety and behavioral expectations that everyone understands will create a safe environment for all students.

7. **Establish and communicate behavior management strategies.** Schools can support positive behaviors by teaching and reinforcing rules, protocols, and expectations for recess, as well as the consequences for not following them.<sup>2,26</sup> Schools should communicate rules, protocols, and expectations to students, school staff, and parents to ensure that everyone receives the same information. These strategies can align with existing schoolwide behavioral initiatives, such as [positive behavioral interventions and supports](#), that can improve social and emotional development and affect overall academic achievement.
8. **Teach conflict resolution skills.** Teaching students how to prevent or handle conflicts can promote positive behavior.<sup>9,17,18,27</sup> Students can learn a variety of conflict resolution strategies to use during recess.<sup>9</sup> These social skills can be taught in the classroom and reinforced by teachers or volunteers during recess.
9. **Ensure that recess spaces and facilities meet recommended safety standards.** The majority of elementary schools (97%) have playground facilities and equipment. However, only 49% of them use the safety checklist and equipment guidelines published by the US Consumer Product Safety Commission in the *Public Playground Safety Handbook*.<sup>28</sup> Similarly, only 49% of schools with playground facilities and equipment post rules for the safe use of specific types of equipment.<sup>28</sup> To ensure that students are safe, schools can establish a routine process for checking recess spaces and facilities and confirming that they meet recommended safety standards.<sup>2,28</sup> Schools also need to communicate safety expectations to staff and students during recess by posting rules in all physical activity areas and on play structures.

### Strategies for Category 3

10. Provide adequate physical activity equipment.
11. Add markings to playground or physical activity areas.
12. Create physical activity zones.
13. Provide planned activities or activity cards.
14. Provide a combination of recess strategies.



## Category 3: Create an Environment Supportive of Physical Activity During Recess

Creating active environments during recess enables students to select and participate in physical activities of their choice. Providing options for students at every grade level to self-select activities increases their physical activity levels and fosters collaboration, creativity, and fun. Strategic inclusion and oversight of opportunities for students with special needs or disabilities also is essential.

10. **Provide adequate physical activity equipment.** Access to equipment can help increase physical activity<sup>29–33</sup> and provide opportunities for students to select physical activities of their choice. Examples of equipment include balls, hula hoops, flying discs, fabric tunnels, jump ropes, and beanbags. Schools should choose equipment that meets the developmental needs of students (e.g., assorted sizes of balls and manipulative equipment). They can also include items that students with varying abilities, including those with disabilities, can use. Schools should provide enough equipment to support a variety of activities and student choices.
11. **Add markings to playground or physical activity areas.** Markings in playground or physical activity areas increase students' physical activity levels during recess.<sup>29–33</sup> Schools can paint surfaces with lines for recreational games (e.g., four square, hopscotch, beanbag toss, number grid) or traditional sports (e.g., basketball, soccer, volleyball). Schools can also have art teachers, community artists, or companies paint murals (e.g., mazes, castles, scenes) that spark creativity and encourage student-designed games and activities.
12. **Create physical activity zones.** Physical activity zones can positively affect students' physical activity levels during recess.<sup>30–33</sup> These zones divide physical activity spaces into specific areas for different types of activities and provide better safety for students. For example, schools can use colors to create sports areas (red zone), fitness and skills areas (blue zone), and relaxation areas (yellow zone).<sup>31</sup> These zones can be designated by existing markings or safety cones. Schools can also designate physical activity zones without markings, such as blacktops, greenspace, and walking or running track. Middle and high schools may create zones related to intramural sports, activity clubs, or competitive leagues that play on a specific schedule.
13. **Provide planned activities or activity cards.** Planned activities and activity cards increase students' physical activity levels during recess.<sup>30</sup> Schools can identify options for different activities on different weeks. Activity cards can show students a variety of activities to choose during recess. Middle and high schools can provide access to weight training facilities, circuit training activities, and gymnasium spaces for group exercise, depending on how the school's physical activity opportunities are organized and supervised.
14. **Provide a combination of recess strategies.** Using a combination of different strategies has been shown to increase students' physical activity levels.<sup>30–31</sup> For example, a pilot study that used activity zones and play equipment at the elementary school level resulted in more minutes of moderate-to-vigorous physical activity during recess.<sup>34</sup> Middle and high schools are likely to use combinations of strategies as a way to use all of their available spaces and give students a variety of options.



## Strategies for Category 4

15. Establish roles and responsibilities for supervising and facilitating recess.
16. Involve students in planning and leading recess.
17. Mobilize parents and others in the school community to support and sustain recess at school.

## Category 4: Engage the School Community to Support Recess

Engaging everyone in the school community—including staff, students, parents, and other invested community members—can help recess be successful and sustainable. Identifying the unique roles and contributions of these individuals can help schools strategically engage all school partners.

15. **Establish roles and responsibilities for supervising and facilitating recess.** School staff and volunteers have two important roles during recess. One is to supervise students to ensure that they are safe and following the rules, protocols, and expectations.<sup>2,11</sup> The other is to be involved and active with students during recess—that is, to facilitate physical activity.<sup>31</sup> Adult supervision of organized activities increases physical activity levels and reduces playground injuries, bullying, and exclusionary behavior.<sup>9</sup> Well-supervised play time that is also unorganized can be effective at increasing physical activity.<sup>11</sup> When developing the recess plan, schools should determine the responsibilities and staffing for the two distinct roles of supervisor and physical activity facilitator.
16. **Involve students in planning and leading recess.** Students should be able to choose activities they enjoy, not only to increase their physical activity levels, but also to empower them to lead activities and encourage other students to join them. Schools can use student leaders to set up and lead recess activities, which allows them to direct their own games, support their peers, and model positive social skills.<sup>35</sup> Elevating the role of student leaders during recess is a catalyst for positive youth development.<sup>17,18</sup>
17. **Mobilize parents and others in the school community to support and sustain recess at school.** Parents and other members of the school community can play a unique role in garnering support for recess by helping with implementation, fund-raising, and promotion.<sup>36</sup> Parents and school community members can be trained to help recess supervisors or physical activity facilitators, and they can volunteer their time to help schools offer daily recess and multiple recesses to students.<sup>37</sup> Middle and high schools can consider engaging the expertise of local fitness club staff, who may be willing to offer free introductory sessions of the group exercises offered at their facilities. This approach is another way to leverage community volunteers to increase physical activity among students. Parents and school community members also can communicate the benefit of recess to district and school administrators and to others who make decisions about recess policies and practices in schools.



## Strategies for Category 5

18. Track physical activity during recess.
19. Collect information on recess to show the effect on student and school outcomes.



## Category 5: Gather Information on Recess

Tracking basic information about recess enables staff to make adjustments to maximize student enjoyment, success, and physical activity. Careful observation of student engagement can be useful to check whether the available choices are being used or need adjustment. This information also can be used to make the case for recess.<sup>38</sup>

18. **Track physical activity during recess.** The [2008 Physical Activity Guidelines for Americans](#) recommends that school-aged children participate in at least 60 minutes of physical activity daily, most of which should be moderate-to-vigorous.<sup>1</sup> Some states also have mandates that require students to engage in a certain number of minutes of moderate-to-vigorous physical activity during the school day in addition to physical education.<sup>19</sup> Schools might consider measuring physical activity and intensity during recess to increase activity levels and meet these requirements.<sup>39</sup> Examples of ways that school staff can monitor student physical activity levels include tracking the types of physical activities students are engaging in, using monitoring devices like heart rate monitors or accelerometers, or using an observational data collection system called System for Observing Play and Leisure Activity in Youth ([SOPLAY](#)).
19. **Collect information on recess to show the effect on student and school outcomes.** School staff can collect information on recess and its effect on students, including academic performance, student behavior, and other educational outcomes.<sup>2,40</sup> Tracking progress helps schools know if changes are needed to improve recess or their recess plan. It also helps schools identify the specific benefits for their students. Information can be collected about the ratio of students to recess supervisors; student behavior during recess and in the classroom after recess; the number and types of injuries, nurse visits, favorite student games and activities, and play equipment used; the number of students not engaged; and the effect on academic achievement (e.g., classroom attention and on-task behavior, grades, disciplinary actions). For students with an [individualized education program](#) or a 504 plan, schools can also collect information about how the recess environment is supporting their progress in meeting identified education goals.





## Take Action

CDC and SHAPE America have developed a guide called [Recess Planning in Schools: A Guide to Putting Strategies for Recess into Practice](#) to help schools put the *Strategies for Recess in Schools* into practice by developing a written school recess plan.<sup>41</sup>

This recess planning guide provides:

- Questions that schools can consider to help them choose strategies identified in [Strategies for Recess in Schools](#) to implement or to help them evaluate their current efforts.
- Templates that schools can use to record information about the strategies they choose for their school recess plans.
- Key resources that align with the recommended recess strategies and provide additional information and examples of how to address these strategies.

## Conclusion

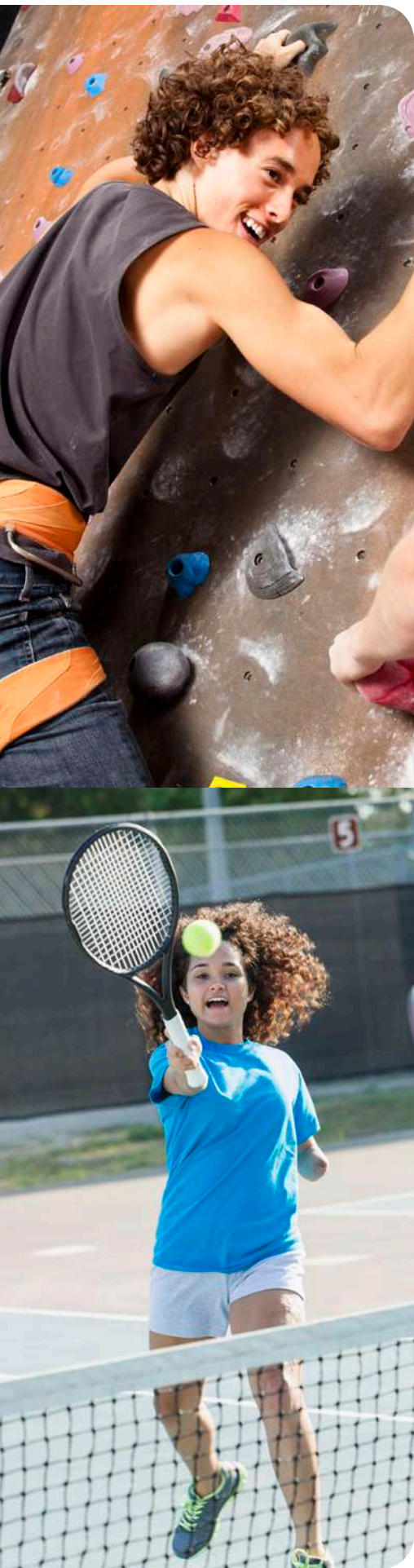
The strategies in this document provide a comprehensive description of the elements that schools can consider as they work to implement successful recess programs for their students. Providing daily recess to students will help them apply the knowledge and skills they learn in physical education and help them get the recommended 60 minutes of daily physical activity. Making recess part of every student's day will contribute to their overall health, development, and success.

# References

1. US Department of Health and Human Services. *2008 Physical Activity Guidelines for Americans*. Washington, DC: US Department of Health and Human Services; 2008. <http://www.health.gov/PAGuidelines/pdf/paguide.pdf>. Accessed August 12, 2016.
2. Centers for Disease Control and Prevention. School health guidelines to promote healthy eating and physical activity. *MMWR Recomm Rep*. 2011;60(RR-5).
3. Institute of Medicine. *Educating the Student Body: Taking Physical Activity and Physical Education to School*. Washington, DC: The National Academies Press; 2013. [http://books.nap.edu/openbook.php?record\\_id=18314&page=R1](http://books.nap.edu/openbook.php?record_id=18314&page=R1). Accessed August 12, 2016.
4. Centers for Disease Control and Prevention. *Comprehensive School Physical Activity Programs: A Guide for Schools*. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2013:22–25.
5. SHAPE America. *Guide for Recess Policy*. Reston, VA: SHAPE America; 2016.
6. Edutopia. Schoolsthatwork: Practice website. Recess for High School Students. Montpelier High School, Grades 9–12, Montpelier, VT. <http://www.edutopia.org/practice/recess-high-school-students>. Accessed August 12, 2016.
7. Centers for Disease Control and Prevention. *The Association Between School-Based Physical Activity, Including Physical Education, and Academic Performance*. Atlanta, GA; Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2010.
8. Michael SL, Merlo C, Basch C, Wentzel K, Wechsler H. Critical connections: health and academics. *J School Health*. 2015;85(11):740–758.
9. Fortson J, James-Burdumy S, Bleeker M, et al. *Impact and Implementation Findings from an Experimental Evaluation of Playworks: Effects on School Climate, Academic Learning, Student Social Skills and Behavior*. Princeton, NJ: Robert Wood Johnson Foundation; 2013.
10. Barros RM, Silver EJ, Stein REK. School recess and group classroom behavior. *Pediatrics*. 2009;123(2):431–436.
11. Murray RC, Ramstetter C, Devore M, et al. The crucial role of recess in school. *Pediatrics*. 2013;131(1):183–188.
12. Jarrett OS, Duckett-Hedgebeth M. Recess in middle school: what do the students do? In: Lytle DE, ed. *Play and Educational Theory and Practice*. Westport, CT: Praeger Publishers/Greenwood Publishing Group; 2003:227–241.
13. Pan C-Y, Liu C-W, Chung IC, Hsu P-J. Physical activity levels of adolescents with and without intellectual disabilities during physical education and recess. *Res Dev Disabil*. 2015;36:579–586.
14. Lang R, Kuriakose S, Lyons G, et al. Use of school recess time in the education and treatment of children with autism spectrum disorders: a systematic review. *Res Autism Spectr Disord*. 2011;5:1296–1305.
15. Ridgway A, Northup J, Pellegrin A, LaRue R, Hightsoe A. Effects of recess on the classroom behavior of children with and without attention-deficit hyperactivity disorder. *Sch Psychol Q*. 2003;18(3):253–268.
16. Faison-Hodge J, Porretta DL. Physical activity levels of students with mental retardation and students without disabilities. *Adapt Phys Activ Q*. 2004;21(2):139–152.
17. Centers for Disease Control and Prevention. *School Connectedness: Strategies for Increasing Protective Factors Among Youth*. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2009. <http://www.cdc.gov/healthyyouth/protective/pdf/connectedness.pdf>. Accessed August 12, 2016.
18. Thapa A, Cohen J, Guffey S, Higgins-D'Alessandro A. A review of school climate research. *Rev Educ Res*. 2013;83(3):357–385.
19. SHAPE America; American Heart Association. *Shape of the Nation. Status of Physical Education in the USA*. Reston, VA: SHAPE America—Society of Health and Physical Educators; 2016.
20. Centers for Disease Control and Prevention. *Results from the School Health Policies and Practices Study 2014*. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2015.
21. Centers for Disease Control and Prevention; Bridging the Gap Research Program. *Strategies for Supporting Recess in Elementary Schools*, Update for the 2012–13 School Year. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2014.
22. Local school wellness policy implementation under the Healthy, Hunger-Free Kids Act of 2010. *Fed Regist*. 2016;81(146). To be codified at 7 CFR §210 and 220.
23. Centers for Disease Control and Prevention. *School Health Index: A Self-Assessment and Planning Guide*. Elementary School. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2012. [http://www.cdc.gov/Healthyyouth/SHI/pdf/Elementary-Total-2014-Tagged\\_508.pdf](http://www.cdc.gov/Healthyyouth/SHI/pdf/Elementary-Total-2014-Tagged_508.pdf). Accessed August 12, 2016.
24. Developing a school recess plan [news release]. Chicago Public Schools. 2011. [http://www.cps.edu/News/Press\\_releases/Documents/DevelopingSchoolRecessPlan.pdf](http://www.cps.edu/News/Press_releases/Documents/DevelopingSchoolRecessPlan.pdf). Accessed August 12, 2016.
25. Council on Sports Medicine and Fitness; Council on School Health; Bergeron MF, Devore C, Rice SG; American Academy of Pediatrics. Policy statement—climatic heat stress and exercising children and adolescents. *Pediatrics*. 2011;128(3):e741–e747. [www.pediatrics.org/cgi/doi/10.1542/peds.2011-1664](http://www.pediatrics.org/cgi/doi/10.1542/peds.2011-1664)
26. Eddy JM, Reid JB, Stoolmiller M, Fetrow RA. Outcomes during middle school for an elementary school-based preventive intervention for conduct problems: follow-up results from a randomized trial. *Behav Ther*. 2003;34(4):535–552.
27. Centers for Disease Control and Prevention. The effectiveness of universal school-based programs for the prevention of violent and aggressive behavior: a report on recommendations of the Task Force on Community Preventive Services. *MMWR Recomm Rep* 2007;56(RR-7):1–12.



28. US Consumer Product Safety Commission. *Public Playground Safety Handbook*. Bethesda, MD: US Consumer Product Safety Commission; 2015. <http://www.cpsc.gov/PageFiles/122149/325.pdf>. Accessed August 12, 2016.
29. Bassett DR, Fitzhugh EC, Heath GW, et al. Estimated energy expenditures for school-based policies and active living. *Am J Prev Med*. 2013;44(2):108–113.
30. Ickes MJ, Erwin H, Beighle A. Systematic review of recess interventions to increase physical activity. *J Phys Act Health*. 2013;10(6):910–926.
31. Parrish A, Okely AD, Stanley RM, Ridgers ND. The effect of school recess interventions on physical activity: a systematic review. *Sports Med*. 2013;43(4):287–299.
32. Erwin HE, Ickes M, Ahn S, Fedewa A. Impact of recess interventions on children's physical activity—a meta-analysis. *Am J Health Promot*. 2014;28(3):159–167.
33. Escalante Y, Garcia-Hermoso A, Backx K, Saavedra JM. Playground designs to increase physical activity levels during school recess: a systematic review. *Health Educ Behav*. 2014;412:138–144.
34. Huberty J, Siahpush M, Beighle A, et al. Ready for recess: a pilot study to increase the physical activity in elementary school children. *J School Health*. 2011;81:251–257.
35. Ren JY, Langhout RD. A recess evaluation with the players: taking steps toward participatory action research. *Am J Commun Psychol*. 2010;46(1-2):124–138.
36. Centers for Disease Control and Prevention. *Parent Engagement: Strategies for Involving Parents in School Health*. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2012. [http://www.cdc.gov/healthyyouth/protective/pdf/parent\\_engagement\\_strategies.pdf](http://www.cdc.gov/healthyyouth/protective/pdf/parent_engagement_strategies.pdf). Accessed August 12, 2016.
37. Centers for Disease Control and Prevention. *Ideas for Parents: Recess*. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2015. [http://www.cdc.gov/healthyschools/parentengagement/pdf/p4hs\\_recess.pdf](http://www.cdc.gov/healthyschools/parentengagement/pdf/p4hs_recess.pdf). Accessed August 12, 2016.
38. Centers for Disease Control and Prevention. *Health and Academic Achievement Overview*. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2014. [http://www.cdc.gov/healthyyouth/health\\_and\\_academics/pdf/health-academic-achievement.pdf](http://www.cdc.gov/healthyyouth/health_and_academics/pdf/health-academic-achievement.pdf). Accessed September 26, 2016.
39. Hayes LB, Van Camp CM. Increasing physical activity of children during school recess. *J Appl Behav Anal*. 2015;48(3):690–695.
40. Minnesota Department of Education. *Recess Moves: A Toolkit for Quality Recess*. Roseville, MN: Minnesota Department of Education; 2013. [http://www.actionforhealthykids.org/storage/Recess\\_Moves\\_A\\_Toolkit\\_for\\_Quality\\_Recess.pdf](http://www.actionforhealthykids.org/storage/Recess_Moves_A_Toolkit_for_Quality_Recess.pdf). Accessed September 21, 2016.
41. Centers for Disease Control and Prevention and SHAPE America—Society of Health and Physical Educators. *Recess Planning in Schools: A Guide to Putting Strategies for Recess into Practice*. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2017.



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