



V. Increasing Physical Activity

Physical activity is an essential component of a healthy lifestyle. In combination with healthy eating, it can help prevent a range of chronic diseases, including heart disease, cancer, and stroke, the three leading causes of death.²⁴⁵ Risk factors for these diseases can begin early in life and be mitigated early in life by adopting regular physical activity habits. Physical activity helps control weight, builds lean muscle, reduces fat, and contributes to a healthy functioning cardiovascular system, hormonal regulatory system, and immune system; promotes strong bone, muscle and joint development; and decreases the risk of obesity.²⁴⁶ Research has also found that physical activity is related to improvements in mental health, helping to relieve symptoms of depression and anxiety and increase self-esteem.²⁴⁷ In addition, some studies show that physical activity is correlated with improved academic achievement.²⁴⁸

Physical Activity Guidelines for Children and Adolescents

Children and adolescents should get 60 minutes (1 hour) or more of physical activity daily.

- **Moderate- or vigorous-intensity aerobic** physical activity (such as running, hopping, skipping, jumping rope, swimming, dancing, and bicycling) should comprise most of the 60 or more minutes a day. Vigorous-intensity physical activity should be included at least 3 days a week.
- **Muscle-strengthening** physical activity (such as playing on playground equipment, climbing trees, playing tug-of-war, lifting weights, or working with resistance bands) should be included at least 3 days of the week.
- **Bone-strengthening** physical activity (such as running, jumping rope, basketball, tennis, and hopscotch) should be included at least 3 days of the week.

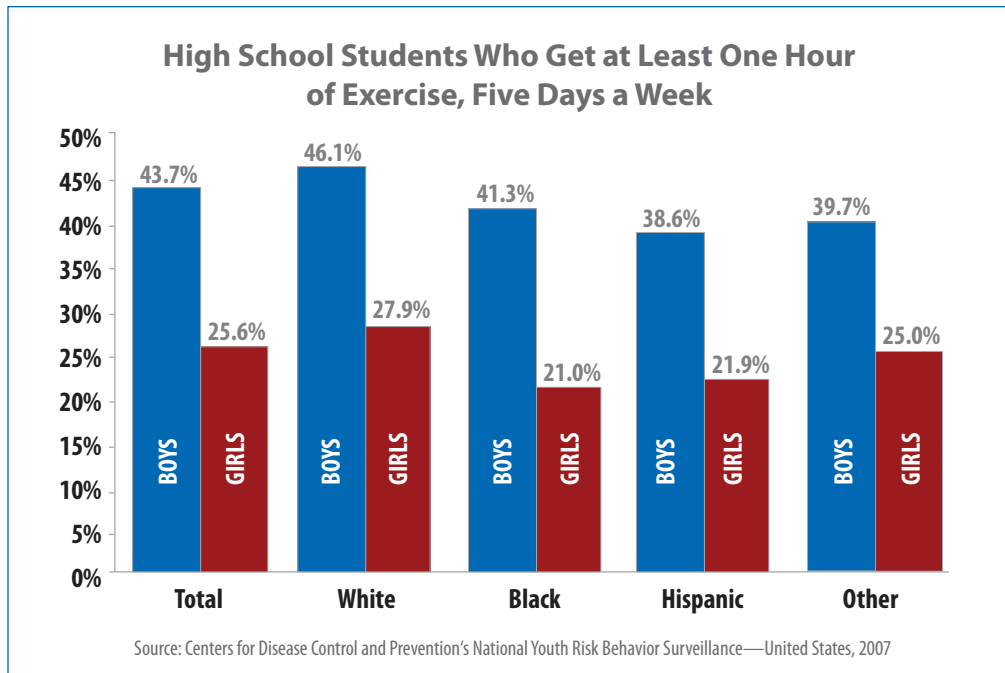
Young people should be encouraged to participate in physical activities that are appropriate for their age, that are enjoyable, and that offer variety. For more information, see <http://www.health.gov/paguidelines/>.

According to the *Physical Activity Guidelines for Americans*, children and adolescents should participate in physical activity for at least 60 minutes every day.²⁴⁹ The Physical Activity Guidelines, developed in 2008 by a committee of experts convened by the U.S. Department of Health and Human Services, provide science-based guidance for Americans ages six and older. They recommend that children's activity time include moderate to vigorous aerobic activity, muscle strengthening, and bone-strengthening exercises, and that young people should be encouraged to participate in age-appropriate, enjoyable, and diverse activities. There are many examples of physical activity, including not only team sports but also walking, biking, swimming, hiking, dancing, gardening, and many other group or individual activities. Recreational activities enjoyable to youth help ensure that they continue to engage in those activities. For example, a survey of Americans who participated in an outdoor activity found that 90% of them began doing so between the ages of five and 18.²⁵⁰ Outdoor activities can be enjoyed in a variety of locations and are often less expensive, more accessible, and can foster life-long activity.

Children should have several opportunities to be active throughout the week and year round. Activity should be a normal part of a child’s day, from walking or biking to and from school, where appropriate, to participating in a physical education class, to engaging in active games during recess, after school, or in the summer at home, in a park, or on a playground. All children benefit and gain enjoyment from physical activity, regardless of ability or disability status, gender, or athletic inclinations and talents. The benefits of physical activity extend beyond childhood too—young people who grow up physically active are more likely to be active adults.²⁵¹

Young people who believe they are competent and have the skills to be physically active are more likely to be active.²⁵² Likewise, young people who feel supported by friends and families or are surrounded by others interested in physical activity, are more likely to participate in both structured and non-structured activities.²⁵³ These social norms are powerful in determining people’s actions.

Unfortunately, our young people live in a social and physical environment that makes it easy to be sedentary and inconvenient to be active. Social and environmental factors that discourage physical activity include: community design centered around automobiles, limited access to low or no cost physical activity close to home (such as parks, recreation centers, and walking and biking paths); new technology that is sedentary in nature; and increased concerns about safety in neighborhoods. The results are startling. Fewer than one in five high school students meet the current recommendations of 60 minutes of daily physical activity,²⁵⁴ and a recent study showed that adolescents now spend more than seven hours per day watching television, DVDs, movies, or using a computer or a mobile device like a cell phone or MP3 player.²⁵⁵ Older adolescents are less likely than younger children to be physically active, and adolescent girls are less likely to be physically active than their male peers.²⁵⁶ African-American and Hispanic adolescent girls are the least likely to be physically active.



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There are added barriers for vulnerable populations to become more physically active. Research shows that children with physical, sensory, and cognitive disabilities have substantially greater difficulty participating in regular physical activity, compared with the general population. A recent study showed that youth with physical disabilities had a 4.5 times higher rate of physical inactivity compared to youth without a disability, and they were twice as likely to report watching television for more than four hours per day.²⁵⁷ Children with physical and developmental disabilities are significantly more likely to be obese or overweight compared with peers without disabilities of the same age.²⁵⁸ However, there is growing awareness that many activity and health disparities reported among children and adults with disabilities are not necessarily a direct result of the disability, but rather a result of the challenges these individuals face in accessing community services and programs. Such challenges include poor accessibility of facilities, services, and programs, as well as environmental barriers such as lack of accessible equipment or transportation. To overcome these barriers and reduce disparities in physical activity, public schools must ensure that services, supports, and programs, including health and physical education programs, are equally accessible to eligible students with disabilities as to those without disabilities, pursuant to the Individuals with Disabilities Education Act (IDEA) and Title II of the Americans with Disabilities Act (ADA).²⁵⁹ Many children who do not attend school or live in traditional community settings, such as those in juvenile detention and correctional centers, also have fewer opportunities for physical activity and consequently are less active.²⁶⁰

Community Resources for Engaging Young People with Disabilities in Physical Activity

BlazeSports America is a direct legacy of the 1996 Paralympic Games held in Atlanta, Georgia. This organization, with school and community programs in all states, includes sports, camps, and athletic competitions that seek to increase independence, improve health, and enhance overall quality of life for youth and adults with physical disabilities. The organization provides support and toolkits for schools and communities to help develop comprehensive programs and create opportunities for including students with disabilities in athletics and physical activity, including an equipment loan program. With programs geared for individuals throughout the lifespan, BlazeSports provides programs and services that moves children and youth through a continuum, starting with lessons on active play and teaching lessons on being active for life. More information on BlazeSports America can be found at: <http://www.blazesports.org>.

Another nonprofit organization, the National Center for Physical Activity and Disability, offers a searchable database of programs by geographic region for students with disabilities at: <http://www.ncpad.org/programs/index-title.php?letter=A>.

Much of the existing research suggests that coordinated, multi-component programs and policies are necessary to effectively change social norms, environments, and behaviors.²⁶¹ As part of a comprehensive approach to encourage young people to be more active, schools and communities should be encouraged to adopt common and consistent policies, practices, and expectations regarding these goals. They should also provide opportunities for healthy lifestyle choices in all childhood settings before, during, and after school, as well as on weekends, holidays, and school vacations.²⁶² This requires changes at all levels, including individual changes; choices, attitudes, and behaviors about physical activity; the structure of school days; teaching approaches; the physical environments of communities;

and policy decisions that govern our way of life.²⁶³ This chapter details what can be done to increase children's physical activity levels:

- in schools and in activities outside of school;
- in the community with the built environment;
- to improve the accessibility of parks and playgrounds; and
- in indoor and outdoor recreational settings.

A. School-Based Approaches

Schools are a key setting to focus on, given the significant portion of time children spend there. Schools can undertake a combination of strategies and approaches to help children be more active including:

- Creating infrastructure and policies that increase access to and encourage physical activity for all students;
- Collecting valid and reliable data and using analytical tools and systems to understand student needs and fitness levels, and promoting approaches that are effective in changing physical activity behaviors and, ultimately, health outcomes;
- Maintaining strong physical education (PE) programs that engage students in moderate to vigorous physical activity for at least 50% of PE class time;
- Providing a variety of activities and specific skills so that students can be physically active not just during class but throughout the day and year; and
- Providing qualified school professionals who are trained in teaching methods to engage students in PE, including for students who face greater barriers to activity.

Most physical activity for students can be provided through a comprehensive school-based physical activity program. Such a program is anchored in quality PE and complemented by activities before, during, and after school, as well as in recess, other physical activity breaks, intramural and physical activity clubs, interscholastic sports, and walk and bike to school initiatives.²⁶⁴ These initiatives should not take the place of PE, but should reinforce lessons taught in PE by providing opportunities to practice and apply the skills learned.²⁶⁵

The components of a comprehensive physical activity program, as identified by the CDC and the National Association for Sport and Physical Education, are described in more detail below. Although the approach focuses on schools and school-related interventions, many community sectors play a role in design, implementation, or evaluation of these interventions.

Schools are an important setting because of access to young people and the school's influence on behavior, as well as the potential impact physical activity has on learning, cognition, and academic achievement. A recent study conducted by the CDC²⁶⁶ reviewed all relevant literature on the impact on education-related outcomes of school-based PE, recess, classroom-based physical activity, and extracurricular physical activities. Their analysis found that spending time on these four physical activity

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approaches had either a positive effect on academic achievement or, at minimum, did not detract from academic outcomes. Specifically:

- Eleven of the 14 studies on school-based PE showed one or more positive associations between this intervention and indicators of academic performance;
- All eight studies on recess found one or more positive association between recess and indicators of cognition, emotion, and academic behaviors, as well as a positive or no effect on children's attention, concentration, and/or on-task classroom behavior;
- Eight of nine studies on classroom physical activity, either through physical activity breaks or learning activities designed to promote learning through physical activity, found positive associations between these activities and indicators of cognitive and academic behavior; and
- All 19 studies examining the relationship between participation in extracurricular physical activity, including afterschool sports or other afterschool physical activity programs, and academic performance found one or more positive associations.

Some school leaders have expressed concerns that a comprehensive physical activity program is too expensive, particularly during difficult economic times and tight budgets. However, there are many low-cost or no-cost steps that school leaders can take to improve the physical activity environment for all students and to promote student health without compromising academic pursuits.

Policies that Support a Comprehensive Physical Activity Program

Local wellness policies, required by USDA for all school districts participating in a school-based meal program, can be used to create district guidelines that can significantly impact physical activity requirements for students. There are many examples that individual school districts can draw from as they develop or refine their wellness policies. They range from specifying minutes of PE or recess requirements, to restrictions on the use of physical activity as punishment. For example, Michigan provides a model local wellness policy for its school districts, combining a quality PE program with a coordinated school health framework and presenting ideas such as recess before lunch and extra physical activity breaks as a reward instead of food snacks.²⁶⁷ However, a recent nationwide study that assessed the effectiveness and relative quality of local wellness policies showed that only 18% of policies reviewed addressed recess and most did not address PE. Physical activity was often the weakest component of the wellness policies.²⁶⁸

Effective implementation of wellness policies is also critical. For example, a study conducted during the first year of local wellness policy implementation in rural Colorado revealed that policies were poorly or weakly worded, and ultimately, had little to no effect on physical activity. Competing pressures, lack of support and resources, and no monitoring or accountability were cited as reasons for the policies' relative weakness.²⁶⁹

Physical Education (PE)

Physical Education (PE) is considered the cornerstone of a school-based comprehensive physical activity program. It provides the basis and opportunity for young people to gain the knowledge and skills needed to maintain physically active lifestyles throughout childhood and into adulthood. A quality PE program can increase student participation in physical activity, increase their physical fitness,²⁷⁰ and enhance their understanding about the purpose and methods of physical activity.²⁷¹ Participation in daily PE is associated with an increased likelihood of participating regularly in moderate to vigorous physical activity.²⁷²

The evidence strongly supports the correlation between school-based PE and increasing physical activity rates. The Task Force on Community Preventive Services is an independent, non-federal, volunteer body of public health and prevention experts tasked with reviewing evidence for interventions, providing recommendations that promote health, and identifying areas for further research. This group reviewed the literature and found that enhanced, school-based PE is an effective strategy for increasing physical activity among young people.²⁷³

The National Association for Sport and Physical Education recommends daily PE from kindergarten through grade 12, suggesting 150 minutes per week for elementary schools and 225 minutes per week for secondary schools.²⁷⁴ Pursuant to their findings, a quality PE program should:

- meet the needs of all students;
- be an enjoyable experience for all students;
- keep students active for most of PE class time;
- teach self-management as well as movement skills; and
- emphasize knowledge and skills for a lifetime of physical activity.²⁷⁵

One of the resources available to school districts is the Physical Education Curriculum Analysis Tool (PECAT) issued by the CDC, which helps school districts conduct an analysis of their PE curriculum, based on national standards but with an option to customize to include local standards.

Effective school-based PE programs must also take into consideration children who are obese or who have physical or cognitive disabilities, chronic diseases (such as diabetes or asthma), or low levels of fitness. These children may need instruction in PE and physical activity programs to develop motor skills, improve physical fitness, and experience enjoyment and success. Nationwide, 62% of schools had students with long-term physical or cognitive disabilities or chronic diseases. Often, young people who have disabilities or chronic health conditions are discouraged from participating in PE class and other forms of physical activity. For example, among schools with students with physical disabilities, 59% allowed these students to be exempt from enrolling in PE.²⁷⁶

Influencing students' attitudes towards and perceptions of physical activity may affect their involvement in physical activity outside of PE class.²⁷⁷ Physical education should encourage students to view physical activity as important and enjoyable. Increasing students' confidence in their ability to engage in physical activity increases the likelihood of enjoyment and therefore, the likelihood of regular par-

ticipation in physical activity.²⁷⁸ Students are more likely to have positive attitudes towards physical activity if their needs and interests are met through a variety of activities. They should also understand the many benefits of physical activity, and should be able to apply their newly acquired skills through various opportunities.

Outdoor Education through the Department of the Interior

Another strategy for getting kids physically active is to involve them in environmental education programs that involve outdoor activity. Interpretive programs and alternative PE lessons involving activities such as hiking, biking, wildlife watching, and kayaking can make outdoor education good for the body and brain, and at the same time, enhance young Americans' exposure to and appreciation of our nation's cultural, historic, and environmental resources. Additionally, the Fish and Wildlife Service and the National Park Service offer curriculum-based teacher training by field stations to classroom teachers and other educators to prepare their students for field trips to national parks, wildlife refuges, fish hatcheries, and other public lands. However, more can be done on the national level to encourage outdoor education on public lands as part of school-based curriculum. These programs also facilitate healthier lifestyles by emphasizing indoor and outdoor activity and exercise.

Another option for engaging students is to incorporate interesting PE lessons that make use of the natural environment. Outdoor education has an added advantage because students who become accustomed to outdoor activity are more likely to be active.²⁷⁹ Depending on the climate, lessons can include activities as varied as hiking, canoeing, and snowshoeing.

Despite the evidence supporting PE, due to budget pressures and other factors, fewer than one in six schools require at least three days a week of PE for the entire school year for all grades in the school. Only 4% of elementary schools, 8% of middle schools, and 2% of high schools provide daily PE or its equivalent for the entire school year for all students.²⁸⁰ While most middle schools and high schools require PE, 12% of middle schools and 25% of high schools allow students to be exempt from PE requirements because of participation in school sports. 14% of these middle schools and 20% of these high schools allow students to be exempt from PE for participation in school activities other than sports such as band or chorus.

For many schools, the barriers to incorporating PE during the school day include lack of time and resources, such as trained staff, and competing priorities. As

noted above, research has shown that allowing students to participate in PE does not detract from academics²⁸¹ but rather may enhance academic achievement.²⁸²

Some states and school districts already require daily PE for students. Like local wellness policies though, unless these requirements are followed, they may not yield the intended results. In Florida, for example, the legislature enacted a requirement for 30 minutes of PE for elementary schools and daily PE for middle school students beginning in the 2009-10 school year. Some reports on the effects of this policy show that school districts struggle to fully fund daily PE and classes are often too crowded to accommodate all students and meet the requirement.²⁸³

The Promise of Technology

Innovative and engaging teaching methods can motivate students to participate in PE, particularly those students who are not natural athletes or who do not enjoy “traditional PE.” Some students have been motivated by the use of technology in the PE classroom that enhances individual skills and teaches students how to monitor their own fitness levels. Examples of technologies that have been incorporated into PE classrooms in recent years include heart rate monitors and equipment that combines activity with video or television-enabled games.

The promise of technology is still uncertain, however. Small, initial studies of these types of “exergaming” technologies suggest that these activities can help engage students who would not otherwise engage in activity and may burn more calories than being sedentary, but there are no studies yet showing a long-term effect on changing physical activity behaviors or on the overall impact on weight loss or children’s health. Additionally, these technologies can be prohibitively expensive for school districts to buy and maintain.

Challenges and assessments can also be used to educate children and get them excited about being active. The President’s Challenge (originally established in 1966 as the Presidential Physical Fitness Award) was created at the recommendation of the President’s Council on Physical Fitness and Sports as a free, publicly-available tool intended both for assessment and engagement of children in fitness-enhancing activity. The Challenge has long provided fitness benchmarks for young people by means of a fitness test. However, the data that are used to classify young people into the three award categories are based on a nationwide sampling that may no longer be relevant, given the increased prevalence of overweight and obesity. While the original Challenge program focused primarily on measures of athletic performance, it has been expanded to include physical activity, in the form of the President’s Council also administers the Presidential Active Lifestyle Award (PALA). PALA helps children and adults build healthy habits by committing to regular physical activity five days a week for six weeks. The First Lady’s *Let’s Move!* campaign has set a goal of doubling the number of children in the 2010-11 school year who earn a PALA award.

Recess for Elementary School Students, Physical Activity Breaks for Older Students

Regularly scheduled recess periods provide another opportunity for children to get part of their recommended 60 minutes of daily physical activity.²⁸⁴ Recess allows children to apply skills learned in PE (such as decision making, cooperation, conflict resolution, and continued motor skill development).²⁸⁵ It should not, however, replace PE or be used to meet time requirements set in PE policies. Recess also can provide the opportunity for children to enhance cooperation and negotiation skills, as well as improve attentiveness, concentration, and time-on-task in the classroom.²⁸⁶ In addition, if recess is scheduled before lunch, students are likely to eat more food, including healthier foods, helping schools meet other desirable goals as well.²⁸⁷

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Nearly all elementary schools provide regularly scheduled recess for students in at least one grade, but 26% of all elementary schools do not provide regularly scheduled recess for students in all grades.²⁸⁸ The average length of recess was slightly less than 30 minutes, with more minutes offered for younger students. However, schools with more students from low-income families are even less likely to offer recess to students.²⁸⁹

Incorporating Movement into Curriculum and Classroom Activities

Schools can offer students breaks for movement during the school day, such as an extra few minutes for students to stretch before the beginning of a class, or integrating activity and movement into lessons. Some schools might offer physical activity in the classroom as part of planned lessons that teach mathematics, language arts, and other academic subjects through movement. These types of activities contribute to students' accumulated physical activity during the school day.²⁹⁰ In addition to promoting good health, physical activity within the regular classroom can enhance on-task classroom behavior of students²⁹¹ and establish a school environment that promotes regular physical activity.

Recommendations

Recommendation 5.1: Developers of local school wellness policies should be encouraged to include strong physical activity components, on par with nutrition components.

Recommendation 5.2: The President's Challenge should be updated to ensure consistency with the Physical Activity Guidelines for Americans and to ensure ease of use and implementation by schools. Private sector partners with an interest in physical activity should help enroll children in the Presidential Active Lifestyle Award program.

Recommendation 5.3: State and local educational agencies should be encouraged to increase the quality and frequency of sequential, age- and developmentally- appropriate physical education for all students, taught by certified PE teachers. Promising strategies include:

- Research-based curriculum and instructional methods that engage students in moderate to vigorous physical activity for at least 50% of PE class time;
- Instruction in a variety of lifetime fitness activities such as walking, hiking, snowshoeing, rock climbing, water sports, and biking as alternatives to team sports, which can also engage students in long-term outdoor recreation activities while helping to teach principles of activity.
- Partnership with private companies that support local educational agencies through the purchase of necessary equipment for PE classes.

Recommendation 5.4: State and local educational agencies should be encouraged to promote recess for elementary students and physical activity breaks for older students, and provide support to schools to implement recess in a healthy way that promotes physical activity and social skill development. Developers of teacher preparation programs should be encouraged to provide instruction on recess management and activity breaks for students. These can include in-service training to teachers and school professionals on actively engaging students, managing recess, and providing supervision during physical activity breaks, if appropriate.

Recommendation 5.5: State and local educational agencies should be encouraged to provide opportunities in and outside of school for students at increased risk for physical inactivity, including children with disabilities, children with asthma and other chronic diseases, and girls. For example, local educational agencies, schools, and teachers should include considerations for ensuring physical activity for students with disabilities in their Individualized Education Plans, pursuant to the IDEA and/or the ADA; State and local educational agencies should be encouraged to follow the National Guidelines for Managing Asthma at Schools;²⁹² and Title IX should be maintained and enforced to ensure gender equity.

Benchmarks of Success

Increase the number of high school students who participate in daily PE classes to 40% by 2015 and 50% by 2030. Currently, roughly 30% of high school students attend daily PE classes, a rate that has been relatively stable since about 1993. This data can be tracked using the national Youth Risk Behavior Survey. Note that while the quality of PE classes cannot be tracked with current survey instruments, the goal is to increase both quantity and quality. Similar progress for elementary students should be made, and can be tracked if data becomes available.

Increase the percentage of schools that offer recess to all students and grades in elementary schools to 95% in 2015. As of 2006, only 79% of schools offered recess to all of these students. Data are collected every six years through the CDC's School Health Policies and Practices Survey (SHPPS). The most recent SHPPS data is for 2006; the next study will be done in 2012 and released in 2013.

As noted earlier in this report, it will be critically important to monitor the overall increase in children's level of aerobic physical activity and muscle-strengthening activity. An enhanced NHANES survey may provide additional data on younger children's physical activity levels across the U.S. Additionally, the revamped President's Challenge tool may offer children, families, and teachers an understanding of how their physical activity performance has improved over time.

B. Expanded Day and Afterschool Activities

Expanded day and afterschool programs also offer schools an opportunity to collaborate with community partners to provide programming to many students. These programs can provide additional opportunities for learning, safe environments for students, and enrichment activities that integrate lessons about healthy living and additional opportunities for students to be active. Expanded day and afterschool activities can appeal to a variety of students' interests, ranging from instruction in such subjects as art and nutrition to engagement in intramural sports and non-competitive lifetime physical activities.

In the school setting, schools may rethink the length and structure of the school day and year, so students have the time they need to succeed, including through activities to improve their physical health, and teachers have the time they need to collaborate and improve their practice. While many of these schools have implemented an expanded day only recently, initial evidence suggests a positive relationship between expanded time programs and academic performance.²⁹³ Research supports the effectiveness of well designed programs that expand learning time by a minimum of 300 hours per school year.²⁹⁴ Research also demonstrates that students that participate in evidence-based afterschool programs improved participants social and personal skills, as well as academic achievement.²⁹⁵

The Expanded Learning Time Model in Massachusetts

Twenty-two schools in Massachusetts have received grants to adopt an expanding learning time model (ELT) and have incorporated more time for such activities through a variety of strategies including adding and/or expanding physical education classes; adding and/or expanding recess; and adding new health and fitness electives. These schools have also initiated a range of community partnerships with entities such as YMCAs, Boys & Girls Clubs, and community centers to connect youth in these schools to the organizations' staff and facilities.

For example, three middle schools in Boston that offer ELT offer a menu of health and fitness electives led by teachers and community partners, including a running club, step team, and competitive basketball, football, volleyball, and dance teams. The schools have established partnerships with the Boston Ballet to offer dance, partner with the Charlestown Community Center and Boston Centers for Youth and Families to offer swimming, and offer break-dancing in partnership with the Bird Street Community Center.

Other activities during the after-school hours can enhance physical activity, including intramural sports and lifetime activities. The National Association for Sport and Physical Education has outlined three characteristics that describe the positive attributes of intramural sports programs: (1) students have a choice of activities or participation; (2) every student is given equal opportunity to participate regardless of ability level; and (3) students have the opportunity to be involved with the planning and implementation of activities.²⁹⁶ Intramurals can offer students an opportunity to experiment and participate in new activities without having to try out for a team or playing in a high-pressure environment. Almost half of all schools in 2006 offered intramural programs.²⁹⁷ Some intramural sports programs integrate academic content with physical activity or focus primarily on positive youth development, building social competencies, and connectedness between young people and adults. These types of programs, sometimes referred

to as "sports-based youth development programs," focus on building students' social and emotional skills, enhancing positive relationships to peers and caring adults, developing youth leadership, and connecting with the broader community, with sports as the basis.

Lifetime physical activities such as walking, running, hiking, swimming, tennis, dancing, and biking can also be fun activities offered by programs and schools, including after-school programs.²⁹⁸ Activities should provide opportunities for girls and boys; meet the needs of students at all levels of skills and physical abilities, particularly those that are not athletically gifted; and reflect student interest. Programs may combine these activities with other initiatives, such as community service or service learning programs that engage students in meaningful community work. And if schools do not go year around, many of the same program models could be used to increase physical activity in the summer.

The U.S. Department of Education's 21st Century Community Learning Centers Program provides support for afterschool activities to students. The latest U.S. Department of Education data show that the centers served about 1.5 million students in 2008 in almost 10,000 sites and received over \$1 billion in FY 2010. While the vast majority of the programs (9 out of 10) operated in schools, school districts were only directly responsible for administering approximately 60% of the programs. The remaining 40% were administered by community-based organizations and other eligible entities, including institutions of higher education, nationally-affiliated non-profit organizations, and for-profit organizations.

Soccer as a Building Block for Learning

America SCORES is an after-school program that combines soccer, creative writing, and service learning. With affiliates across the country, a pilot study of the America SCORES Bay Area in San Francisco showed that participants in the program had statistically significant lowering of BMI. An unpublished national evaluation also showed that participants had an increased level of physical activity, increased reporting of feelings of self-confidence, self-efficacy, and enjoyment in learning, increased reporting of reading enjoyment and longer time reading independently, and gains in writing achievement.

Sources: Madsen K, Thompson H, Wlasiuk L, Queliza E, Schmidt C, Newman T. (2009). After-school program to reduce obesity in minority children: A pilot study. *Journal of Child Health Care*, 13, 333; America SCORES Works. (n.d.). Retrieved from: <http://www.americascoreres.org/#/national/program/184>.

The Administration's Blueprint to reauthorize the Elementary and Secondary Education Act proposes to reform and strengthen 21st Century Community Learning Centers Program by incorporating approaches that better integrate community involvement and comprehensively redesign and expand the school day. In addition to providing additional time for academic work, programs would also explicitly focus on providing enrichment activities, including those that improve mental and physical health, opportunities for experiential learning, and greater chances for families to actively engage in their children's education.

Physical activity programs at the local level are often offered by a variety of providers, including park and recreation departments within local government, faith-based entities, or community centers like the YMCA or Boys and Girls Clubs. These outside partners can be of particular help in bringing in expertise and experience that might not always exist in schools or districts. Partnerships with parents and community-based organizations may increase the availability and quality of these programs, as well as the time students spend in physical activity.²⁹⁹ They can also provide additional resources and supports.

In under-resourced communities, schools can provide the physical structure for after school, weekend, and summer programming. Community partners, with the support of local businesses or industry, can provide the personnel, programming, and support for activities. Some programs prefer to maintain relationships without formal agreements, while many others use more formalized agreements to delineate terms of the arrangement. Known as joint use agreements,³⁰⁰ these arrangements can maximize the school facility and allow students to access playgrounds, gymnasiums, basketball courts, pools, or fields before and after school hours. In practice, these joint use agreements are also forged between schools and non-governmental entities, and include conditions and considerations for liability, a concern often cited by schools. A recent study showed that when a school ground was opened to children, not only were more children active as compared to a similar community, they also reported declines in watching television, DVDs, and movies, as well as playing video games on weekdays.³⁰¹

All students, regardless of gender, race or ethnicity, health status, physical, sensory, or cognitive disability, should have access to physical activity programs. Physical activity programs that overemphasize team sports and do not emphasize lifetime physical activities can exclude potential participants.³⁰² As noted above in the discussion of PE, effective programs must also take into consideration children who are obese or who have physical or cognitive disabilities, chronic diseases (such as diabetes or asthma), or low levels of fitness. These children may need instruction to develop motor skills, improve physical fitness, and experience enjoyment and success.

Interscholastic Sports

Not surprisingly, participation in sports has been associated with higher levels of participation in overall physical activity.³⁰³ One study suggested that adolescent participation in sports decreases cardiovascular risk factors, particularly for older adolescents.³⁰⁴ Additionally, participation in sports programs has been associated with improved mental health and a reduction in risky health behaviors.³⁰⁵ Girls in particular seem to benefit most from team sport participation; two recent studies suggested that girls who participated in athletics were healthier and had improved academic and career outcomes as adults.³⁰⁶ Nationwide, 77% of middle schools and 91% of high schools offered interscholastic sports programs in 2006;³⁰⁷ in 2007, 56% of high school students reported that they had played on at least one sports teams run by their school or a community group.³⁰⁸ With the economic challenges facing school districts over the last few years, some administrators have cut or considered cutting team sports. Some research suggests that as much as \$2 billion was cut from youth sport program budgets nationwide in 2008.³⁰⁹ Other school districts have instituted “pay-to-play,” which requires students to pay a fee to play on a sport team. According to a recent assessment by the National Federation of State High School Associations, 33 states have schools with pay-to-play programs.³¹⁰ A recent study showed that fees up to \$100 cause a 10% decrease in participation, while fees up to \$200 cause a 20% decline.³¹¹ Costs can vary dramatically depending on the school district; in some districts, the price is capped and in others, participation is expensive. For example, in one district, it can cost as much as \$282 to run cross-country, \$508 to play field hockey, and \$969 to play football.³¹² For some students, particularly low-income students, this fee is impossible to pay and excludes students from engaging in sports.

Recommendations

Recommendation 5.6: Federal, state, and local educational agencies, in partnership with communities and businesses, should work to support programs to extend the school day, including afterschool programs, which offer and enhance physical activity opportunities in their programs.

- Districts, schools, local government, community-based organizations, and local businesses should partner together to create or enhance expanded day and afterschool programs that incorporate physical activity.
- Support should be provided to expand participation in intramural sports programs and non-competitive physical activity clubs that appeal to students who are not athletically gifted.
- Entities that accredit afterschool programs should include guidelines for incorporating age- and developmentally-appropriate physical activity in accreditation standards.
- State and local educational agencies should explore and execute joint use agreements to secure school facilities for out-of-school time activities and provide age- and developmentally-appropriate programming for students.

- The Federal government should support state, local educational agencies, and nonprofit organizations by providing resources, including funding and technical assistance, to promote high quality after school programs and programs that comprehensively redesign and expand the school schedule for all students, and full-service community schools through the 21st Century Community Learning Centers program. Technical assistance should also focus on innovative methods that ensure inclusive opportunities to promote physical activity for students with disabilities, as well as strengthening partnerships.

Recommendation 5.7: State and local educational agencies should be encouraged to support interscholastic sports and help decrease prohibitive costs of sports by curbing practices such as “pay-to-play,” working with other public and private sector partners.

- The Federal government should continue to support programs, such as those sponsored by the Corporation for National and Community Service, that train and develop more qualified coaches for intramural sports teams and programs, and should collaborate with state, and local governments, nonprofits, philanthropies, and private sector partners to ensure that these programs are more widespread.
- State and local governments should consider strategies to make facilities and coaches more available for local youth sports teams.
- College and university sports teams should engage K-12 teams to increase opportunities for young people to learn about sports and receive coaching, and local sports figures and businesses should become more involved in supporting or sponsoring K-12 sports teams.

C. The “Built Environment”

How communities are designed and function can promote—or inhibit—physical activity for children and adults. The built environment consists of all man-made structures, including transportation infrastructure, schools, office buildings, housing, and parks. Children’s ability to be physically active in their community depends on whether the community is safe and walkable, with good sidewalks and reasonable distances between destinations.

Research is still emerging on the exact interaction of the built environment and the impact on childhood obesity. Yet, a series of research studies suggests that attributes of our current built environment, such as low density development and sprawl, have had a negative impact on health outcomes, contributing to obesity and related health problems.³¹³ Several of these studies have found that areas with greater sprawl tend to have higher rates of adult obesity. The combination of greater distances between destinations as development sprawls outward from city centers and the lack of pedestrian and bicycle infrastructure contributes to eliminating walking and biking as options and to increased driving. One-fifth of all automobile trips in urban areas are one mile or less, and over two-fifths of these trips are under three miles,³¹⁴ distances easily walked or biked if the proper infrastructure were available. Low-income communities in particular often have a higher number of busy through streets, poor cycling and pedestrian infrastructure, and few high-quality parks and playgrounds—all elements which seem to deter physical activity.³¹⁵

V. INCREASING PHYSICAL ACTIVITY

On the other hand, communities that emphasize pedestrian-friendly design have the potential to bring about better health outcomes. Such designs help decrease automobile travel, increase opportunities for physical activity, enhance public safety, and improve air quality, while simultaneously preserving agricultural and other environmentally fragile areas. Research suggests that doubling residential density across a metropolitan area might lower household vehicle miles traveled by about 5 to 12%, and perhaps by as much as 25%, if coupled with other measures.³¹⁶

Creating new walkable, bikable communities can be feasible, but retrofitting the vast majority of existing American communities poses a separate challenge. This includes revitalizing older, traditional neighborhoods, often found in center cities or towns, to make them more viable, active communities. It also includes retrofitting newer sprawling communities to diversify their transportation options, creating a more walkable street grid.

Before undertaking any major new development or planning initiatives, communities may consider completing an assessment of the potential health impacts of the development. For example, Health Impact Assessments (HIAs) describe a combination of procedures, methods, and tools used to judge a policy or project's potential public health effects and the distribution of those effects within the population.³¹⁷ HIAs can be used to focus decision-makers' attention on the health consequences of the projects and policies they are considering, particularly how land use decisions may impede or improve physical activity.

The existence of safe, convenient, and accessible facilities for walking and biking are likely to increase physical activity and make parents feel more secure about their children's safety. However, they do not by themselves ensure more active lifestyles for residents of such communities. "Social environments" also play a role, including how community members feel about their neighborhood, how secure they feel, and how interested they are in participating in community-based physical activity. Evidence suggests that the combined effect of the built and social environment has an impact on rates of childhood obesity and overweight. A recent study found that:

- Children living in unsafe neighborhoods or those characterized by poor housing and the presence of garbage and litter on streets had an approximately 30-60% higher chance of being obese or overweight than children living in better conditions.
- Children with low neighborhood amenities or those lacking neighborhood access to sidewalks or walking paths, parks or playgrounds, or recreation or community centers had 20-45% higher odds of becoming obese or overweight compared to children who had access to these amenities.
- The impact of the built environment was particularly strong for younger children (ages 10-11) and for girls. Girls ages 10-11 living in neighborhoods with the fewest amenities had 121-276% higher adjusted odds of being obese or overweight than those living in neighborhoods with the most amenities.³¹⁸

In particular, violence shapes our everyday decisions about where to live, work, go to school, shop for groceries, play, and whether go for a walk in the neighborhood or to a local park. In one study, people who classified their neighborhood as “not at all safe” were three times more likely to be physically inactive during leisure time than those who considered their neighborhood to be “extremely safe.”³¹⁹ Another study also found that walking habits vary according to an individual’s perception of safety and physical surroundings. For example, fear may lead someone to shop at a nearby convenience store, which may only contain unhealthy food, instead of walking further to a farmers market, or a grocery store that has healthy produce options.³²⁰ Effective public safety measures, such as community based anti-crime and anti-gang initiatives, can reduce fear of crime and violence. Where possible, such efforts should be targeted on specific “hot spots” for crime and violence that impede access to parks, playgrounds, and other recreational facilities, as well as routes to healthy eating options.

“Active Transport”: Safe Routes to School and Beyond

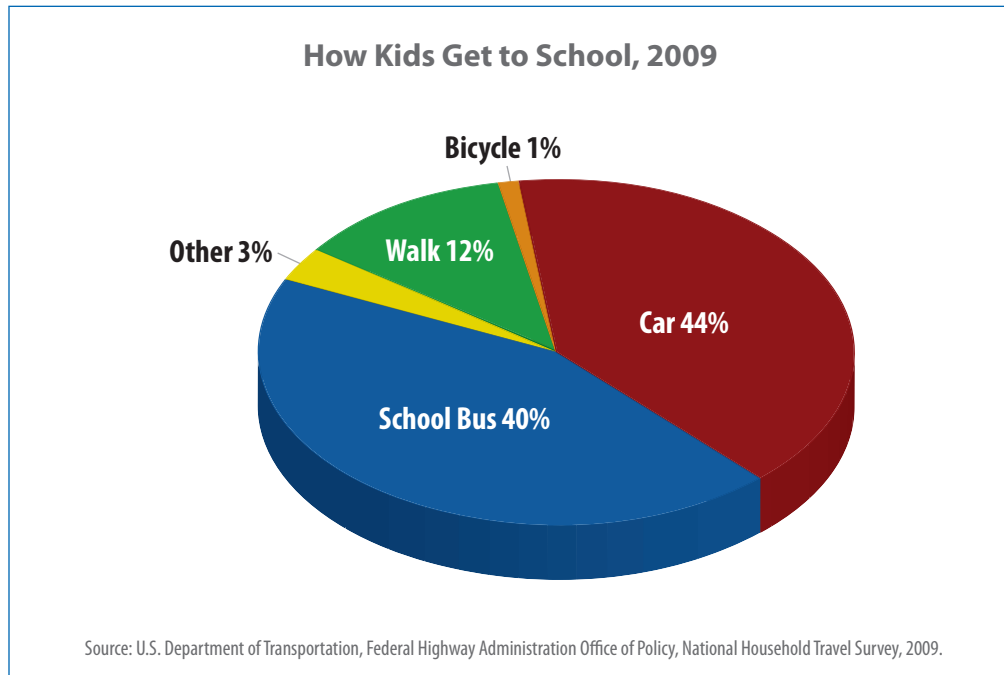
Active transport refers to approaches that encourage individuals to actively travel between their destinations throughout the day, such as by biking or walking. Children who walk or bike to school report being more physically active, including engaging in more moderate to vigorous physical activity, than those who travel by car, bus, or train.³²¹

Programs like Safe Routes to Schools (SRTS), funded by the U.S. Department of Transportation (DOT), have proven an effective way to get students safely walking and biking to school. Serving students in grades K-8, the SRTS program supports capital investments, such as building sidewalks, crosswalks, creating better community designs, and providing other supports for active transport. Nearly 6,500 schools are participating in the federal SRTS program, which has provided \$612 million for this purpose since 2005. SRTS helped and continues to help increase the number of students walking to school³²² and decrease those being driven to school.³²³ A study of SRTS sites in California showed a 38% increase in students walking to school.³²⁴

Even without dedicated funding, some communities have found creative ways to make safe passages for young people between homes and neighborhoods, schools, and after school activities. For elementary students, the “walking school bus” has been a successful model, in which adults walk to school with a group of students. For older students, creative partnerships with police departments have helped students travel between school and afterschool activities safely in some communities.

Still, in 2009, only 13% of students rode a bike or walked to school, down from 44% in 1969.³²⁵ Similarly, the percentage of students riding a school bus has also declined and more students report coming to school by personal vehicle than other methods.³²⁶ Parents cite many barriers to “active transport,” commonly referencing distance to school, traffic-related danger, and weather. In the same survey, 12% of parents cited fear of crime as a barrier. Six percent of parents also cited school policies that prohibit walking and biking to school as the reason their children did not walk or bike to school.³²⁷ Bike and pedestrian safety is a real concern as well. In 2007, 14,000 children were injured and 300 killed by cars. There is a “safety in numbers” trend, in which roadways generally become safer for everyone when more people are out walking and biking.³²⁸

V. INCREASING PHYSICAL ACTIVITY



Recommendations

Recommendation 5.8: Reauthorize a Surface Transportation Act that enhances livability and physical activity. A complete network of safe bicycle and pedestrian facilities would allow children to take more trips through active transportation and get more physical activity. New Federal aid construction projects should accommodate bicyclists and pedestrians by incorporating “Complete Streets” principles. As improvement projects for existing facilities are undertaken, transportation infrastructure should be retrofitted, where feasible, to support and encourage bicycle and pedestrian use. State and local money can also be leveraged to support safe facilities for children to walk or bike to places like parks, playgrounds, transit, and community centers. The reauthorization could adopt Complete Streets principles that would include routine accommodation of walkers and bicyclists for new construction, to influence retrofitting of existing communities, and to support public transportation. In addition, it could enhance authority for recreational areas on public lands.

Recommendation 5.9: The Environmental Protection Agency should assist school districts that may be interested in siting guidelines for new schools that consider the promotion of physical activity, including whether students will be able to walk or bike to school.

Recommendation 5.10: Communities should be encouraged to consider the impacts of built environment policies and regulations on human health. Local communities should consider integrating Health Impact Assessments (HIAs) into local decision-making processes, and the Federal government should continue to support the development of an HIA approach, tools, and supporting resources that promote best practices.

Recommendation 5.11: The Federal Safe Routes to School Program (SRTS) should be continued and enhanced to accommodate the growing interest in implementing Safe Routes to Schools plans in communities. This can be facilitated by:

- Continuing aspects of current law, including requiring that every State maintain a full-time SRTS Coordinator, spending funds on both infrastructure projects and non-infrastructure activities, and continuing to operate the National Clearinghouse.
- Continuing Federal investments to increase opportunities for SRTS participation.
- Streamlining Federal requirements and reducing administrative burden for grants management to fit with the unique nature of SRTS projects and programs.
- Expanding funding eligibility to cover kindergarten through 12th grade.
- Developing improved surveillance and validated measures for tracking participation in SRTS and its impacts.

Recommendation 5.12: “Active transport” should be encouraged between homes, schools, and community destinations for afterschool activities, including to and from parks, libraries, transit, bus stops, and recreation centers.

Benchmarks of Success

Increase by 50% by 2015 the percentage of children ages 5-18 taking safe walking and biking trips to and from school. An increase of 50% would mean that 19.5% of school trips would be by biking or walking. This data is available from the National Household Travel Survey, which is conducted every five to seven years, so there may be a delay in this data becoming available.

D. Community Recreation Venues

Parks and Playgrounds

Parks and playgrounds in a community can provide opportunities to run and play and may increase unstructured physical activity.³²⁹ If children can easily access safe parks and playgrounds in good repair, they are more likely to engage in recreational physical activity there.³³⁰

National, state, and local parks are an ideal environment to be physically active, and increased access to parks is proven to promote physical activity among children³³¹ and adolescents.³³² In addition to encouraging physical activity, parks and other natural landscapes can provide recreational experiences, opportunities to learn and grow, and places of quiet refuge. The Federal government provides support for state and local conservation and recreation initiatives through the Land and Water Conservation Fund (LWCF) State Assistance Program. The goal of this program is to increase access to a park, a river, or an area of open space close to home. As part of this initiative, funds can be used to enhance and support the further development of parks and playgrounds in communities. Other Federal programs provide funding to States and local entities for park and open space conservation and recreation trails and shared use paths, including HUD’s Community Development Block Grant program and DOT’s Transportation Enhancement program.

V. INCREASING PHYSICAL ACTIVITY

Private, nonprofit organizations and corporations have also supported park and playground development in communities. By engaging in park clean-ups and playground development, businesses can take part in initiatives that contribute to community cohesion and improve access to playgrounds and parks.

Outdoor and Indoor Venues

Outdoor recreation and access to nature play a vital role in the physical, psychological, spiritual well-being, health, and development of people of all ages.³³³ The current poor health of many American children today, including increasing levels of obesity-related illnesses,³³⁴ attention deficit-hyperactivity, vitamin D deficiency, and myopia are being attributed, in part, to a generational decline in the level of outdoor recreation in natural environments.

Children's level of physical activity has been shown to increase when they participate in environmental education programs that promote outdoor activity.³³⁵ Children of all ages are healthier, happier, and have better social skills if they have frequent opportunities for free and unstructured play outdoors.³³⁶ For these reasons, children need to be encouraged to connect with the outdoors—places that can promote both physical and emotional health.

Communities still need to ensure adequate and accessible indoor facilities for physical activity. For students who are unable to play outside because of allergies or asthma, particularly during high-pollution days or inclement weather, communities should make sure indoor recreational facilities are available to children. Currently, 65% of schools allow for community use of physical activity or athletic facilities, a strategy that can increase opportunities for indoor activity.³³⁷

Communities also must ensure that children actually are aware of the opportunities available to them. The Task Force for Community Preventive Services found that informational outreach is essential to maximizing the results of improvements in access to physical activity.³³⁸ In some communities, outreach was unnecessary, but in others, outreach and communications was needed.

Recommendations

Recommendation 5.13: Increase the number of safe and accessible parks and playgrounds, particularly in underserved and low-income communities. This can be accomplished in part by:

- Targeting LWCF funds to increase use of and access to parks and open space in low-income neighborhoods and communities that receive funding, and by expanding Tribes' access to funding and strengthening their capacity to compete for funding.
- Businesses considering "adopting" (building and/or helping to maintain) parks and playgrounds in their communities.
- Foundations, community and faith-based organizations, and businesses engaging in community planning efforts to ensure their work in developing parks and playgrounds are enhanced and maintained over time, and are supportive of other community initiatives.
- Encourage development or renovation of playgrounds to include less asphalt and more natural terrain, so as to foster unstructured, "natural" play.

Recommendation 5.14: The Federal government should continue to support investments in a wide range of outdoor recreation venues, such as National Parks, Forests, Refuges and other public lands, and expand opportunities for children to enjoy these venues. The U.S. Department of Interior and the National Forest Service maintain hundreds of millions of acres of public land, as well as rivers, parks, and other areas.

- Federal land management agencies should work together along with state, Tribal and local agencies to promote and ensure access to a range of youth-appropriate activities on public lands and waters. This includes transportation to help children get to and from parks and other public lands.
- Federal agencies should work with non profits, corporations, and local youth groups to strengthen partnerships and identify new opportunities for outdoor physical activities, programs, and events.

Recommendation 5.15: Local governments should be encouraged to enter into joint use agreements to increase children's access to community sites for indoor and outdoor recreation.

Recommendation 5.16: The business sector should be encouraged to consider which resources and physical assets like fields and gyms can be used to increase students' access to outdoor and indoor recreational venues. Corporations, for example, may have large grounds that they can make available for children in the community to play soccer or engage in other outdoor activities.

Recommendation 5.17: Entertainment and technology companies should continue to develop new approaches for using technology to engage children in physical activity.

Benchmarks of Success

Increase access to, use of, and the number of safe and accessible parks and playgrounds, particularly in underserved and low-income communities. Partial data sources exist in the private sector to measure this, but work will need to be done to develop those sources and measure progress.

Key Questions for Future Research

- What are the teaching methods that best engage students in PE, including the relative benefits of technology in the PE classroom, for achieving long-term behavioral changes in physical activity habits?
- What kinds of outdoor activities for children are most likely to produce lasting increases in physical activity levels? Are the benefits different from indoor physical activity?
- How can we better target physical activity interventions to multiple communities, including diverse ethnic populations and children with disabilities? What are the most effective methods for reaching these populations?
- What are appropriate measurement tools for tracking trends in physical activity?
- Do health impact assessments change health outcomes in communities where they are used?
- What percentage of children lives within walking or biking distance from school or a park entrance?
- Does the built environment increase physical activity rates for children and reduce obesity? If so, what are the mechanisms for this reduction?
- How can the insights of behavioral economics, such as changing the default choice in a given situation, be used to promote physical activity among young people?

