



# Research DIGEST

*Published quarterly  
by the President's Council  
on Fitness, Sports & Nutrition  
Rockville, MD*

## Guest Author

Amy A. Eyster, PhD, CHES  
George Warren Brown School  
of Social Work  
Prevention Research Center  
Washington University in  
St. Louis

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*Amy L. Eyster is Principal  
Investigator of the PAPRN  
(PA Policy Research Network)  
funded by the Centers for  
Disease Control and Prevention,  
National Association of Chronic  
Disease Directors, and Active  
Living Research.*

## Promoting Physical Activity through Policy

### Introduction

Physical activity has been encouraged as a health promoting behavior for decades. Specific guidelines and recommendations have evolved from structured and vigorous exercise for improving and maintaining cardiovascular benefits to lower-intensity cumulative activity for general health benefits.<sup>1</sup> Recommendations for physical activity have been transformed to make it easier and more fitting for the general population, but still less than half of adults in the United States do not achieve the recommended amounts of physical activity and about 25% report no leisure-time physical activity at all.<sup>2</sup> While it is difficult to determine temporal trends in physical activity due to different standards and measurements used over time, it would be accurate to say that Americans have been lacking in physical activity for quite a while. Conversely, exercise equipment, fitness centers, and other sporting goods are growing industries in the U.S. According to the International Health, Racquet and Sportsclub Association, 45.4 million people were members of health clubs in the United States in 2008.<sup>3</sup> However, this growth in the fitness and sports industry has not had an impact on the number of people reporting that they are active at recommended levels.

Evidence within the last two decades has substantiated not only the health benefits of planned exercise and moderate-intensity physical activity, but also the detrimental effects of inactivity. Poor exercise capacity (inactivity) has been associated with higher cardiovascular disease mortality in the general population and all-cause mortality in people with diabetes and hypertensives.<sup>4</sup> The body responds to being sedentary by storing excess calories and with an immune response that causes physiological changes and increased disease risk.<sup>5</sup> Recent reports link sedentary behavior at work with obesity and other health problems.



*"Given the health promoting and disease preventing benefits of physical activity, policies are being explored as ways to increase this behavior as a health improvement strategy. Policies at the national, state, and local level are being implemented to facilitate physical activity with encouraging results."*

Jobs in which people usually tend to sit for long hours have been blamed for contributing significantly to the obesity epidemic worldwide.<sup>6</sup> Time spent watching TV, on the computer, or playing sedentary video games, collectively referred to as “screen time,” is on the rise for both adults and children, with potentially detrimental health outcomes.<sup>7</sup>

Promoting exercise and warning of the ills of inactivity hasn't worked to increase population physical activity or to decrease population sedentary time. These approaches target individuals to change behavior and aren't significantly effective or sustainable.<sup>8</sup> It is difficult to motivate a sedentary person to exercise, but it is even more difficult if that sedentary person lives in an environment where few opportunities to be physically active exist.

## The Policy Approach

Thinking beyond individually based approaches, researchers and practitioners are turning to *policy* as a means to increase population physical activity. Historically, some of the greatest public health achievements have been made through policies.<sup>9</sup> Sanitation regulations stopped the spread of many communicable diseases. Water fluoridation policies helped reduce childhood dental issues. Safety belt regulations have contributed to decreasing death and severity of injury from automobile accidents. Scientific knowledge about the association of secondhand smoke to heart disease and cancer led to clean indoor air policies. Exposure to secondhand smoke has decreased sharply due to the changes from these policies.<sup>8,9</sup> Another example is the successful elimination of trans-fat in restaurants through policies and regulations.<sup>10</sup>

Policies, which consist of laws, regulations, and rules, can determine changes in physical, economic, and social environments.<sup>11</sup> Policy approaches are designed to help people develop healthier behaviors by providing opportunities and support for those behaviors.<sup>8,12</sup> There are several benefits to approaching a public health problem through policy. Policy interventions can benefit all people exposed to the environment rather than focusing on changing the behavior of one person at a time. In addition to broadening the scope, a policy is a type of intervention that may significantly affect a population over the long term. Policies often stay in place over time so these approaches are often more permanent than programs focused on individual change.<sup>13</sup>

There are significant challenges to these approaches, too. Policies, particularly those related to complex issues like physical inactivity or obesity, can be difficult to develop, implement, and evaluate. Lack of evidence on the effectiveness of these policies can hinder support; particularly the lack information on economic and health benefit.<sup>14</sup>

## What Is a Physical Activity Policy?

Physical activity policy is a legislative action, organized guidance, or rule that may affect the physical activity environment or lifestyle behavior. These policies can be in the form of formal written codes, written standards that guide choices, or common practices.<sup>15</sup>

## A Framework of Physical Activity Policy

Policies to improve physical activity may be direct, such as required participation in quality physical education programs in schools, or less direct, such as a transportation policy that improves access to transit and thereby induces additional walking, or reduces automobile/cycling conflicts and results in increased cycling. In order to understand research and program efforts in physical activity policy research, Schmid and colleagues (2006) developed a framework for physical activity policy research.<sup>15</sup> (See Figure 1.) This conceptual framework includes the important components of policy research (identification, determinants, implementation, and outcomes) as well as the settings in which policies apply by sectors (schools, worksites, public spaces, transportation, health, etc.) and scaled levels (national, state, regional, local). This framework organized and conceptualized policy interventions and priorities for public health efforts to promote physical activity.

Although conceptually PA policy falls neatly on three axes, the complexity lies in the cross-sector and cross-scale relationships. Some policies are integrated from the federal to the local level. Within the 50 states, there are 3,033 counties and over 34,500 municipalities and towns.<sup>16</sup> Policies can be made at each of these levels, often intersecting. For example, the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) guaranteed federal funding for highways, public transportation, and bicycle/pedestrian projects.<sup>17</sup> This policy influences state funding, which in turn helps prioritize and fund local projects within a state. Each state and locality may have their own policies that can facilitate or hinder policy implementation.

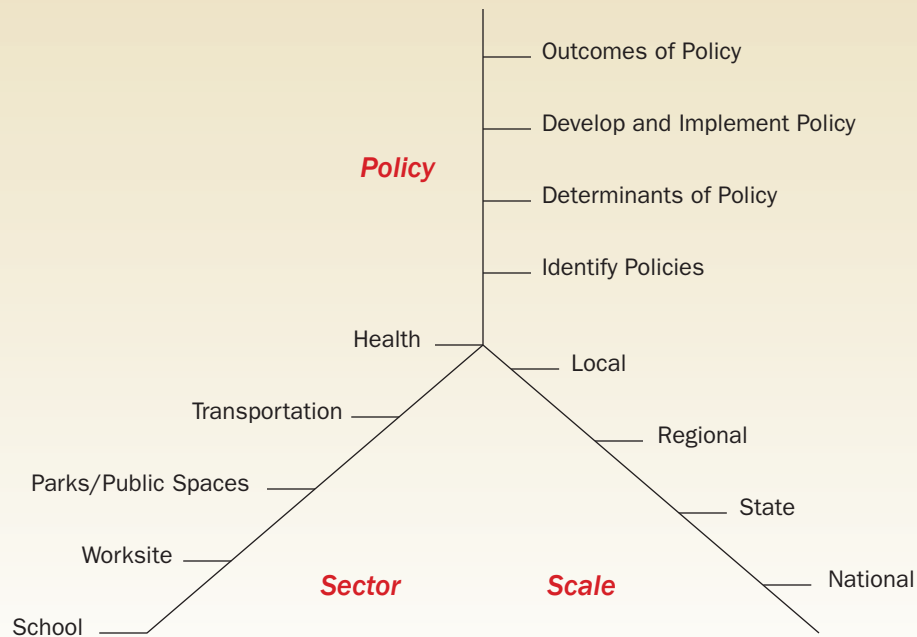
Some PA policies also cross sectors. For example, a community policy requiring bike lanes can impact neighborhood residents, but also school active transport policies, and even worksite commuting policies. A policy to fund park development can help provide access to community members, but also may facilitate joint use agreements with schools. Not only do these policies reach populations within specific sectors, but they have a cumulative effect across sectors.

## Theory and Physical Activity Policy

The policy process is often described as complex, illogical, and rarely linear. Harold Laswell, founder of policy sciences, described policy making as a sequence of many actions by many actors, each with potentially different interests, information, roles,

**Figure 1. A Framework for Physical Activity Policy**

**Physical Activity Policy Framework**



and perspectives.<sup>18</sup> Political Scientist John Kingdon developed a framework that outlines this process that is applicable to physical activity policy.<sup>19</sup> He suggests that policies move forward when three “streams” converge. The first of these streams is the definition of the problem (e.g., high physical inactivity prevalence in children). The second is the development of potential policies to solve that problem (e.g., quality physical education policies). The third is the role of politics and public opinion (e.g., state school budgets or district interest in student wellness). Policy change occurs when a “window of opportunity” opens and the three streams push through a policy change.<sup>19</sup> This window of opportunity can come in many forms. Sometimes this window of opportunity can be a champion pushing for the cause. For example, an enthusiastic state legislator or school district leader can facilitate the physical education agenda. Other opportunities might include funding, as many policies are more likely to be effectively implemented if adequate funding is available. Sometimes this window can be associated with a negative event. If a community has a high rate of automobile-pedestrian accidents, this may prompt policy makers to pass laws to make streets safer with sidewalks and crosswalks. Kingdon’s framework demonstrates the complex interactions that must take place in a timely manner in order for policies to progress.

**Promising Physical Activity Policies**

The next section describes five policy categories within schools and communities that have the potential to improve population physical activity. Evidence of effectiveness of these policies is emerging as more policies are being implemented and systematic physical activity policy research is being conducted. Each of the following descriptions includes rationale and details of policy components. The list is by no means comprehensive, but is meant to give a general overview of the policy concepts within these areas, and highlight promising initiatives to promote increased physical activity.

**Quality Physical Education in Schools**

Currently, there is a growing consensus that policy-based approaches targeting the school environment, such as physical education (PE), may have the greatest impact on child and adolescent physical inactivity and childhood obesity.<sup>20</sup> The importance of PE is also noted in national health-related goals. *Healthy People 2020* includes two objectives relating to PE: increase the proportion of schools that require daily PE, and increase the proportion of students who participate in daily PE.<sup>21</sup> Despite the potential for PE to increase physical activity in youth, federal and state mandates on academic accountability and financial stress in school budgets are contributing to a

decrease in or elimination of PE programs.<sup>22</sup> According to a report by the Center on Education Policy, 46% of school districts report an increase in time spent on English/Language Arts and Math, but a concurrent decrease in PE by 25 to 49 minutes per week.<sup>23</sup> A recent analysis of school policy data showed that many schools have PE programs, but few provide daily PE and many do not specify weekly time requirements.<sup>24</sup>

PE is another example of how physical activity policy can cross scales. State education departments may give local control over many issues to schools or districts, but state mandates are often issued for curriculum standards, federal requirements, or special topics. For example, the U.S. Department of Agriculture (USDA) Child Nutrition and WIC (Women, Infants, and Children) Reauthorization Act of 2004 (Public Law 108-265) required school districts to create wellness policies. States may set some general or minimum requirements for these policies, but individual school districts provide specific direction and may exceed the minimum recommendations,<sup>22</sup> and can vary by school or even classroom.

What makes a good PE policy? *The Guide to Community Preventive Services*, a resource for evidence-based recommendations for programs and policies to promote population health, recommends an increase in moderate to vigorous activity in PE class.<sup>25</sup> The National Association for Sport and Physical Education (NASPE) also provides guidance as to how much PE is adequate. NASPE recommendations include instructional periods totaling a minimum of 150 minutes per week for elementary students and 225 minutes per week for middle and secondary school.<sup>22</sup> NASPE also recommends that students achieve and maintain a health-enhancing level of physical fitness that includes activities to improve cardio respiratory endurance. Another important aspect of PE policy is PE teacher certification or professional development. Policies requiring a degree in PE or ongoing professional development in PE are important to providing an effective PE program in schools. NASPE's National Standards for Physical Education include a recommendation for qualified physical education specialists teaching PE. NASPE acknowledges that highly qualified PE teachers will be certified to teach by virtue of having completed an accredited PE teacher education program.<sup>22</sup> Equally important is the provision for facilities and equipment. Numerous studies indicate that access to places for physical activity opportunities is an important aspect of increasing levels of activity.<sup>26-28</sup> NASPE recommends a dedicated facility for the PE instructional program and has set standards for size, design, and amenities<sup>29</sup> and policies can provide the requirements, guidance, and funding for this.

Another component of PE policy is reduction or elimination of exemptions. According to the School Health Program and Policies Study (SHPPS), 30% of high schools allow exemptions from PE requirements ranging from interscholastic sports involvement to cheerleading.<sup>30</sup> Proponents of these exemptions say that students are getting more than enough physical activity

through their involvement in these programs outside of the curriculum. However, opponents argue that PE can teach lifestyle physical activity that can be carried throughout adulthood and that those students who take advantage of exemptions will not get this instruction.

## Complete Streets Policies

Policies that influence how a community is designed and developed can influence physical activity. A report prepared by the National Conference of State Legislators found that the most effective policy avenue for encouraging bicycling and walking is incorporating sidewalks and bike lanes into community design.<sup>31</sup> Because of the positive potential for these policies, *Healthy People 2020* includes a developmental objective to increase legislative policies for the built environment that aim to enhance access to and availability of physical activity opportunities.<sup>32</sup> The three areas of focus within this objective include community-scale, street-scale, and transportation and travel policies.<sup>32</sup>

One example of a policy targeting the built environment is a complete streets policy, which ensures that transportation planners and engineers consistently design and operate the entire roadway with all users in mind—including bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities.<sup>33</sup> With the implementation of these policies, people of all ages and abilities will have more options for active travel and increase their physical activity. Although evidence is still emerging, research findings are encouraging. Several studies show that community, street, and transportation design can positively influence activity. Powell and colleagues found that 43% of people with safe places to walk within 10 minutes of home met recommended activity levels; whereas, among individuals without safe places to walk, just 27% were active at recommended levels.<sup>34</sup> Another study showed that residents are 65% more likely to walk in a neighborhood with sidewalks than one without them.<sup>35</sup> A comprehensive study of walkability found that people in walkable neighborhoods reported about 35–45 more minutes of moderate intensity physical activity per week and were substantially less likely to be overweight or obese than similar people living in low-walkable neighborhoods.<sup>36</sup>

Easy access to transit, also a component of complete streets, can contribute to physical activity. In a study by Besser and Dannenberg, nearly one-third of transit users met the 1996 Surgeon General's recommendations for physical activity through their daily travels.<sup>37</sup> Other benefits to complete streets policies include improving safety for pedestrians and bicyclists, lowering family transportation costs, and fostering strong communities. As of 2010, over 100 jurisdictions—state, local, and regional—have adopted complete streets policies.<sup>33</sup> Figure 2 outlines the components of an ideal complete streets policy.

## Joint Use Policies

Joint use or community use policies are state, district, or school-level policies that allow for shared use of space or facilities between a school and a city or private organization,<sup>38</sup> emphasizing the benefits public school facilities provide to the community.<sup>39</sup> Schools often contain gyms, tracks, playing fields, swimming pools, and other amenities that may not be used to the fullest capacity beyond school hours.

Joint use policies are being encouraged at the national level as a strategy to increase opportunities for physical activity.

*Healthy People 2020* includes a goal to increase the proportion of the nation's public and private schools that provide access to their physical activity spaces and facilities for all persons outside of normal school hours.<sup>32</sup> Community use of school facilities for physical activity is also included in CDC's *Recommended Community Strategies and Measurements to Prevent Obesity in the United States*.<sup>40</sup>

Research on these policies is emerging. A study by Farley et. al.<sup>41</sup> suggests that opening school yards during evenings and weekends increased physical activity levels in inner-city youth. Brink and colleagues (2009) found that observations from renovated school grounds outside of school hours contributed to increased physical activity levels of children.<sup>42</sup> While most public school districts allow some general community use (e.g., civic use, community meetings, or special events), few promote the use of facilities for recreation and physical activity.<sup>38</sup> Several states have enacted joint use legislation. Most of the state-level legislation merely allows districts to have joint use agreements or shields school districts

from liability.<sup>43</sup> These state laws lay the foundation for individual school districts to determine the nature and extent of community use.

While it seems intuitive that school gyms, playgrounds, and other facilities would provide convenient and inexpensive opportunities for students and community members to be physically active, many districts and schools do not have policies in place or encourage their use. Implementing joint use policies is a way to improve access to physical activity with low organizational or personal expense. Since schools already exist, there is no expense of creating new facilities. Additionally, facilities like ball fields and playgrounds provide places to actively play for no cost to users. Disparities in the availability of physical activity opportunities in low resource areas are well-documented.<sup>44-46</sup> Past literature finds school facilities to be a viable resource for increased physical activity, particularly in underserved areas.<sup>41, 42</sup>

## Community Trail Policies

A trail is defined as a travel way established either by construction or use which is passable by a variety of modes such as walking, bicycling, in-line skating, wheelchairs, and others.<sup>47</sup> Community trails provide healthy and safe recreation, transportation, and physical activity opportunities for people of all ages. They also connect people with social destinations or points of interest, and ensure sustained opportunity for physical activity.<sup>48</sup> A recent study found that people who use trails at least once per week were twice as likely as non-users to meet national physical activity recommendations.<sup>49</sup> Scientific evidence from the *Guide to*

## Figure 2. Components of a Complete Streets Policy

### An ideal complete streets policy:

- Includes a **vision** for how and why the community wants to complete its streets.
- Specifies that **"all users"** includes pedestrians, bicyclists, and transit passengers of all ages and abilities, as well as trucks, buses, and automobiles.
- Applies to **both new and retrofit projects**, including design, planning, maintenance, and operations, for the entire right of way.
- Makes **any exceptions** specific and sets a clear procedure that requires high-level approval of exceptions.
- Encourages **street connectivity** and aims to create a comprehensive, integrated, connected network for all modes.
- Is adoptable by **all agencies to cover all roads**.
- Directs the use of the **latest and best design criteria** and guidelines while recognizing the need for flexibility in balancing user needs.
- Directs that complete streets solutions will **complement the context** of the community.
- Establishes **performance standards** with measurable outcomes.
- Includes **specific next steps** for implementation of the policy.

Source: <http://www.completestreets.org/changing.policy/policy-elements/>

*Community Preventive Services* shows that providing access to (outdoor) sites for physical activity, such as trails, influences the level of physical activity in a community. Trails can be successful at reaching more sedentary populations whose activity of choice is walking.<sup>50</sup> Studies have concluded that when trails are introduced in a neighborhood community, people who are not regularly physically active use the trail and increase their physical activity.<sup>50</sup> Policies or legislation that support community trail development and sustainability are often among the initial steps in making a planned community trail a reality. Federal policies such as Intermodal Surface Transportation Efficiency Act of 1991, the Transportation Equity Act for the 21st Century (TEA-21) and, in 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), encourage support for non-motorized transportation.<sup>51</sup> The National Recreational Trails System coordinated through the National Parks Associations also encourages the development of trails.<sup>52</sup> Although federal programs broadly outline trail plans and provide financial support, state, regional, or local policies provide more specific details on efforts to develop or expand trail systems within the context of a particular state or community. State policies on distributing federal funding, creating new funds, zoning, or trail promotion are important factors in trail development and sustainability.<sup>53</sup> Regional or local policies on zoning or matching funds also play a role in trail development. Trails are a good example of cross-scale physical activity policies. From funding to maintenance, federal, state, and local policies need to be coordinated and complementary.

There are several important components to community trail policies. First, funding is a necessary element. Funds can be allocated through state legislation or federal programs such as the Recreational Trails Program (RTP). The RTP is an assistance program of the Department of Transportation's Federal Highway Administration (FHWA), supporting hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles. RTP funds are administered by the Federal Highway Administration from federal fuel tax. States receive an apportionment each year to provide grants for recreational trail projects.<sup>51</sup>

Immunity to landowners or components outlining safety issues are also vital to trails and can be leveraged by state or local policy.<sup>54</sup> As a result of policy, liability can be removed from the landowner in exchange for the use of property. In many cases, the use of private property improves access to the trail or enhances connectivity of trail segments. Connectivity is defined as the directness of ease of travel between two points.<sup>55</sup> Connectivity along with land use mix are proven urban planning strategies to increase physical activity.<sup>55</sup> State and local policy can enhance connectivity by providing guidance for trails that cross multiple municipalities or districts. Evidence is emerging to show the many benefits of a community trail for individuals and communities. Policies supporting trail planning, development, and maintenance hold promise in encouraging population physical activity.

## **Policies for Active Transportation To and From School**

Another example of physical activity policies are those that promote active transportation (ATS) such as walking and biking to and from school. With the increase in obesity and sedentary behaviors among children and adolescents, enhancing opportunities to be physically active is becoming a national focus. Two national objectives in *Healthy People 2020* outline the importance of ATS. Developmental objectives include increasing the percentage of children and adolescents aged 5–15 walking to school for distances of one mile or less; and increasing bicycling to school within the same age group for trips to school of 2 miles or less.<sup>32</sup> These policies have also gotten a boost by national funding. The National Safe Routes to School Program (STRS), administered through the Federal Highway Administration, provides states with funds for programming and infrastructure to promote active transport to school. This program was established in August 2005 as part of the most recent federal transportation re-authorization legislation, SAFETEA-LU, and provides multiyear funding for the surface transportation programs that guide spending of federal gas tax revenue. Section 1404 of this legislation provides funding (for the first time) for State Departments of Transportation to create and administer SRTS programs which allow communities to compete for funding for local SRTS projects.<sup>56</sup> Additionally, this law states that 10–30% of the funds allocated to the state must be used for non-infrastructure activities (e.g., education, encouragement, and enforcement), while 70–90% of the funds must be spent on construction projects such as bike lanes, trails, paths, sidewalks, etc.<sup>57</sup>

Although commonplace 50 years ago, the proportion of individuals that engage in active commuting to school today is estimated at 5% to 14%.<sup>58,59</sup> One national survey showed that ATS is more common among boys than girls, and among children in lower grades than those in upper grades.<sup>60</sup>

There are many reasons for promoting policies to increase walking or biking to school. Emerging evidence points toward several individual and community benefits of ATS. Research shows that children and adolescents who walk or bicycle to school have higher daily levels of physical activity and are more likely to meet national physical activity recommendations than are youth who travel to school by car or bus.<sup>61</sup> Other studies indicate weak, but favorable, BMI outcomes with active commuting.<sup>62</sup> In addition to health benefits, ATS programs and policies give children and adolescents who walk or bicycle to school a chance to learn to safely navigate their community. Also, any infrastructure improvements made to community streets or sidewalks will benefit not only the students, but all community residents as well. In spite of the benefits, there are many challenges to implementing ATS policies. Lack of built environment conducive to ATS such as poor infrastructure or sidewalks may inhibit ATS.<sup>63-65</sup> Like community trail policies, ATS policies cross policy scales. ATS can be facilitated or impeded by local, state, and federal policies,

## Figure 3. What can decision makers do to improve children's health and support walking to school?

### An ideal complete streets policy:

Safe Routes to School puts forth the “Four Es” as the key to a solution: **Engineering, Enforcement, Education, and Encouragement.**

State and local officials can create environments that improve child safety by revising laws, ordinances, and practices to promote the following:

- The construction of **sidewalks**
- Neighborhood **schools**
- Traffic-calming measures, such as roundabouts and **speed humps**
- Requirements that city planners, engineers, real estate developers, and landscape architects consider **pedestrian safety** when designing new communities or modifying existing ones

Source: <http://www.phlpnet.org/healthy-planning/products/safe-routes-schools-talking-points>

such as guidelines on bus transportation, funding for programs, and school start times. Safety issues are a big concern for parents, too. Parents consistently cite traffic danger, as well as concerns about their children's safety from strangers, as reasons why their children are unable to bicycle or walk to school.<sup>64</sup>

Much like the community trail policies, ATS policies require participation and cooperation from many collaborators. School personnel (e.g., administrators, teachers), parents, other community members, public safety workers, city planners, and local policy makers need to be involved to make the ATS policies a comprehensive priority. Getting support and coordination across these groups may present a challenge. However, leadership in the form of a “champion” for the effort can facilitate cooperation and make the policies and programs happen.<sup>66</sup> Policy makers at many levels can influence the impact of ATS programs (Figure 3). By creating and supporting environments that facilitate walking and biking to school, they can contribute to childhood safety and overall community health.

## Summary

From sanitation to safety, laws and regulations have provided guidance to improve population health. Given the health promoting and disease preventing benefits of physical activity, policies are being explored as ways to increase this behavior as a health improvement strategy. Policies at the national, state, and local level are being implemented to facilitate physical activity with encouraging results. As these policies grow in number and scope, there are several recommendations to facilitate effectiveness.

### Develop and enhance transdisciplinary relationships.

Collaboration from many disciplines and organizations is vital for development, implementation, and sustainability of these policies. Increasing physical activity through policy is not just a health issue and needs to involve policy makers, transportation, planners, public safety, and others. ATS and community trail policies are two good examples of how different groups can work together for success. Fostering these relationships and interactive communication among groups is necessary for success.

### Raise the priority of policy evaluation.

Enacting or putting a policy in place is only one part of the policy continuum. Evaluation of policy implementation is needed to build evidence in support of these efforts. Documenting the economic benefit of policies can help increase public and political support for a policy and increase its sustainability. In spite of this importance, evaluation and economic analysis is often complex and difficult to conduct with limited time and resources. Future physical activity policy efforts should include a comprehensive evaluation component.

### Place more emphasis on dissemination of findings.

Since these efforts are transdisciplinary in nature, the dissemination of information on the policies needs to be multifaceted. Dissemination strategies should reach a wide audience through a variety of mediums. Development of strategies to most effectively reach policy makers at all levels should be a dissemination priority. Also, reporting about the process of policy formation and implementation is recommended. Sharing lessons learned about barriers to implementation and applying best practice strategies to policy development are essential to the effectiveness of policy.

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