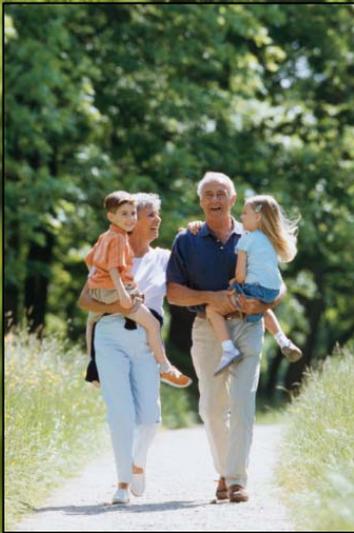
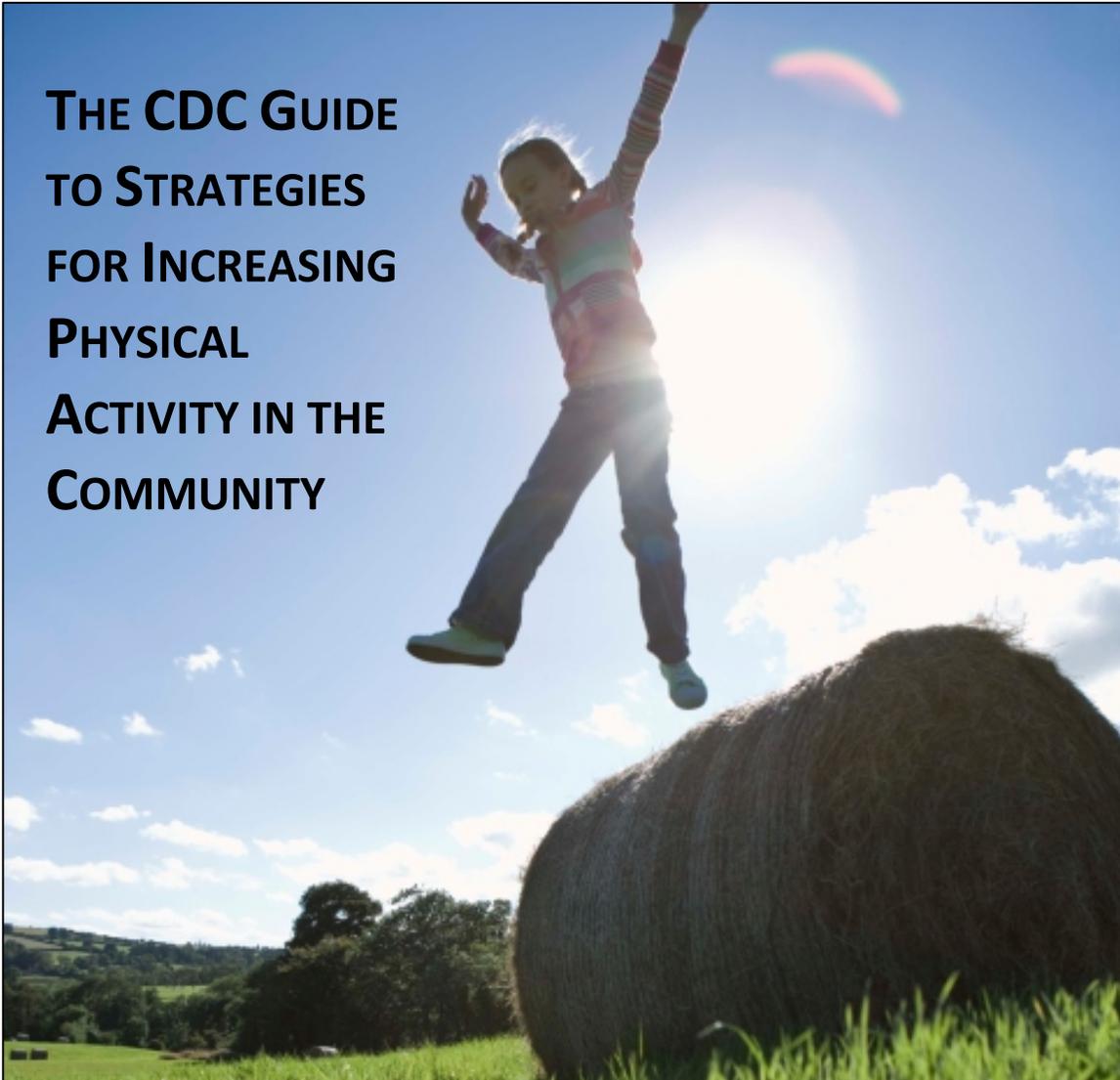


**THE CDC GUIDE  
TO STRATEGIES  
FOR INCREASING  
PHYSICAL  
ACTIVITY IN THE  
COMMUNITY**



## **I. Introduction**

Since the publication in 1996 of *Physical Activity and Health: A report of the Surgeon General*(1), extensive additional evidence for the health benefits of physical activity has accumulated. In order to update the science, a distinguished advisory committee reviewed the new research findings and rated the strength of the evidence for health benefits from physical activity. Results of this review are published in the report by the Physical Activity Guidelines Committee *2008 Physical Activity Guidelines for Americans*(2); this report strengthens and extends findings from the original Surgeon General's report. The Guidelines report indicates that health benefits of physical activity include prevention of disease and reductions in risk factors associated with these many diseases and conditions. Physical activity also serves as one of the elements in recommended treatments for obesity and other chronic conditions.

Based on the existing evidence, the Guidelines provide recommendations for physical activity for children and adults.

### *Benefits for Children*

According to this new report there is strong evidence that children and adolescents benefit from physical activity through improved: cardio respiratory and muscular fitness, bone health, cardiovascular and metabolic health biomarkers, favorable body composition and there is moderate evidence that physical activity reduces symptoms of depression.

### *Benefits for Adults*

For adults and older adults the list is much longer. Benefits include: lower risk of early death, diseases of the heart and vascular system, diabetes, breast and colon cancer and prevention of weight gain, weight loss (when combined with reduced calorie intake) improved cardio respiratory and muscular fitness and reduced depression. For older adults there is strong evidence for better cognitive function in those who are physically active and moderate evidence for better functional health, reduced abdominal obesity, hip fracture, lung cancer and maintenance after weight loss.

### *Recommendations for Children*

For children and adolescents the recommendations are for 60 minutes or more per day of aerobic activity with most of the activity of moderate or vigorous intensity and with vigorous-intensity physical activity on at least 3 days. Muscle strengthening and bone strengthening activity should also be included at least three days per week. (2)

### *Recommendations for Adults*

For adults the Guidelines indicate 1) all adults should avoid inactivity and adults who participate in any amount of physical activity gain some health benefits, 2) for substantial health benefits adults should do at least 2.5 hours (150 minutes) of moderate-intensity activity or 75 minutes of vigorous activity or a equivalent combination of both (categorized as "Active"), and 3) for additional and more extensive health benefits adults should increase their aerobic activity to 300 minutes of moderate or 150 minutes of vigorous intensity physical activity or an equivalent combination of both (categorized as "Highly Active"). (2) Guidelines also recommend that adults do muscle-strengthening activities that involve all

major muscle groups on two or more days a week and older adults should do exercises that maintain or improve balance if they are at risk for falling.

### Current Status

Despite this growing body of evidence of health benefits from physical activity most American adults and children, do not get enough physical activity. In 2007, only about 35% of students in grades 9-12 met recommended levels of physical activity, 25% did not participate in 60 or more minutes of physical activity on any day of the previous 7 days, and only 30% attended daily physical education classes (3) In 2008, about 44% of adults met the 150 minute (“active”) goal and about 28% were “highly active” (300 minutes). (4)

### Effective Interventions

As the evidence that physical activity has numerous physical, health, and emotional benefits has grown, the body of effective evidence-based interventions has also grown. Several systematic reviews of this evidence have been conducted (5-8, 10) and a textbook on the public health approach to promoting physical activity is forthcoming. (9) These materials serve as the primary source of the recommendations provided below.

From a public health perspective some strategies merit a higher priority than others, like those with the potential for greatest reach, effectiveness, and sustainability. Policy and environmentally based strategies integrate well with the prevailing socio-ecological perspective of multi-sector determinism. Based on these criteria and on expert opinion, the broad range of effective physical activity promotion strategies appropriate for public health agencies and their partners that have higher priority include: Community Wide Campaigns, Increased Access with Informational Approaches, and Increased Opportunities for Physical Activity in Schools.



## **II. Community-Wide Campaigns**

### Definition

Community-wide campaigns are large-scale, multi-component campaigns that deliver messages by using media such as television, radio, newspaper columns and inserts, and trailers in movie theaters. They are also characterized by a “brand” message or “tag line” that is used consistently through all means and channels of communication. These campaigns differ from media campaigns in that they also include other on the ground components such as support and self-help groups, physical activity counseling, risk factor screening and education at worksites, schools and community health fairs, community events, and changes in policy and the environment such as opening schools facilities to public use and creation of walking trails. Campaign messages can be directed to large and relatively undifferentiated audiences through diverse media and communication or can be tailored to fit the needs of specific target populations. These interventions are generally sustained efforts with ongoing high visibility and involve many sectors and partnerships. Community-wide campaigns should be applicable to most communities in the United States if the campaign is adapted to the target audience. They might also be applicable in other settings that might also be viewed as communities such as university settings and large worksite settings. (5-7)

### Rationale

Traditional prevention efforts focus on educating and motivating individuals to help them increase their physical activity. Community-wide campaigns address multiple levels of influence that include individual, interpersonal, institutional, and community levels. Such “socio-ecological” multi-pronged efforts toward promotion and elimination of barriers have been found to be more effective than each single component. (11, 12)

### Evidence of Effectiveness

The Guide to Community Preventive Services rates the evidence as strong for community-wide campaigns. The recommendation for community-wide campaigns is based upon a review of 10 studies that suggest these campaigns result in a median increase of about 4% increase in the percentage of people engaging in physical activity, and result in a 16% increase in energy expenditure. (5-7)

In addition to increasing physical activity, community-wide campaigns were often shown to improve community capacity by developing or strengthening social networks and by improving community members’ sense of cohesion and collective ability to bring about change. This intervention approach is effective with diverse populations (e.g., among different racial/ethnic minority and socioeconomic groups) and in diverse settings (e.g., rural, urban). (5-7)

### Key Considerations

- While Community-wide campaigns have wide reach and thus potentially greater impact than less comprehensive interventions, they are also more resource intensive and require well

trained staff. With such large campaigns it may be difficult to insure an adequate “dose” or exposure to the intervention for all sectors of the community.

- Community-wide campaigns are not short-term interventions. To be effective, they need to be sustained for a period of time, in order to change knowledge, attitudes or behaviors of the target audience. Changes in knowledge or attitudes are not appropriate end goals.
- It’s important to conduct formative research to help develop an appropriate theme and effective messaging.
- It is important to have a recognizable “brand” associated with the campaign.
- A critical element for success is community buy-in. This may require considerable effort.

### Action Steps

1. Build or become a part of partnerships in your community that include local agencies and organizations who plan and implement physical activity-related initiatives, such as parks and recreation centers, schools, community and senior centers, hospitals, fitness facilities. These partners may be able to offer activities and events as part of the campaign.
2. Talk to key individuals and organizations in the community that can help promote the campaign, including local celebrities, local media, and local government.
3. Identify the target audience and conduct the campaign based on formative research.
4. Develop a program logic model that illustrates your program’s theory of action and illustrates how community activities conducted by others relate to your program.

### Program Examples

**Wheeling Walks** was a comprehensive community-wide media campaign that used social marketing strategies and advertisements similar to private industry. Wheeling Walks was developed in West Virginia to promote 30 minutes of physical activity each day in insufficiently active adults, aged 50-65 in a West Virginia community. The program consisted of four phases:

- I. 1999-2000: Community involvement
- II. 2000: Message development
- III. 2001-2002: Intervention and evaluation
- IV. 2002: Policy and environmental actions

The marketing strategy used print, television and radio ads combined with walking challenges, worksite programs and press releases. The campaign ran for approximately one year and took advantage of free

press from multiple television networks, radio stations, and newspapers. The program resulted in a 14% net increase in self-reported walking. (13) Wheeling Walks provides a comprehensive report of how to implement a similar campaign in other communities.

**B.C. Walks** was a community-wide campaign conducted by the United Health Services in Broome County, NY to change behavior by promoting 30 minutes of daily walking among insufficiently active residents 40-65 years old through paid media, public relations, and public health activities. The campaign included an intense 8-week multi-media blitz coupled with community health activities. A coalition of local human services agencies was developed to promote community engagement and sustainability. As a subcommittee of the coalition, a speaker's bureau was developed to educate and inform the community about BC Walks activities.



BC Walks bought 953 thirty-second advertisements during prime-time network television, 1645 sixty-second radio advertisements, 1314 thirty-second advertisements on cable television, and 10 quarter-page advertisements in the local daily newspaper. Local physicians and nurse practitioners were given prescription pads with the BC Walks logo in order to prescribe daily physical activity for their patients. Campaign staff worked closely with transportation and land use officials in the county to expand safe opportunities for walking through development of trails and improved sidewalks.

Campaign activities resulted in 28 television news stories, 5 radio news stories, 10 newspaper stories, and 125 television news promotions in addition to the paid media spots. The campaign speakers' bureau made 42 presentations to a total of 1492 people. Thirty worksite walking programs, comprising a total of 1207 people, were established, and five schools, with approximately 2000 students, also established walking programs. In the follow-up survey, 78% of Broome County respondents reported hearing about the campaign. The percentage of older adults reporting an increase in walking was 34% higher in Broome County than in a control county.

Steps to a HealthierNY- <http://www.broomesteps.org/hd/steps/>  
Healthier US- <http://www.healthierus.gov/index.html>

## Resources

1. CDC's Division of Nutrition, Physical Activity, and Obesity-Social Marketing Resources. This site provides background information on social marketing as well as resources and training. [www.cdc.gov/nccdphp/dnpa/socialmarketing/index.htm](http://www.cdc.gov/nccdphp/dnpa/socialmarketing/index.htm)
2. Center of Excellence-UNC Chapel Hill- Community-wide Campaign information: This website provides a description, examples, and resources for this strategy. <http://www.center-trt.com/index.cfm?fa=opstrategies.pa&page=community>
3. Wheeling Walks website provides comprehensive information on developing and implementing a similar campaign. <http://www.wheelingwalks.org/index.asp>
4. Wheeling Walks manual provides a step by step toolkit for conducting a community wide campaign. [http://www.wheelingwalks.org/WW\\_TrainingManual/TM\\_index.asp](http://www.wheelingwalks.org/WW_TrainingManual/TM_index.asp)

## 2. Point of Decision Prompts

### Definition

For physical activity promotion programs point-of-decision prompts (PODP) are signs posted by elevators and escalators to encourage people to choose to walk using nearby stairs. Information provided by the signs has varied but generally includes information about the health and weight loss benefits of stair use and serve as a reminder that stairs are available for use. A few PODP programs have included enhancements to the stairwell such as music, carpet and art, to make the use of stairs more rewarding. (5-7, 9)

### Rationale

Point of decision prompts have been used in a variety of behavior change programs and have proven effective in prompting desired behaviors. Stairs are required by building codes in multistory buildings and thus provide an additional opportunity for activity. PODP programs require few resources and serve to incorporate physical activity into daily living, create a climate where choices to be active are encouraged and increase awareness about the benefits of physical activity. This intervention strategy is appropriate for diverse populations and settings. In at least one study there was a greater increase in stair use by overweight than normal weight individuals. Stair use studies have been conducted in shopping malls, airports, office buildings, healthcare facilities, and universities. None of the studies reviewed by the Guide examined the effects of PODP programs on children. (5-7)

### Evidence of Effectiveness

The *Community Guide* concluded that there is strong evidence that point-of-decision prompts are effective in increasing the number of people who choose to use the stairs. The median absolute increase in stair climbing in 11 studies was 2.4 percentage points. The majority of studies reported low baseline stair use (below 20%). The median relative improvement in observed stair use was 50% (interquartile interval: 5.4%, 90.6%) from baseline. (5-9)

### Key Considerations

- Enhanced point-of-decision prompts interventions may take considerable time to fully implement, if multiple stairwell improvements are made.
- Point-of-decision prompts have been shown to be effective with the placement of signage alone; therefore, it may not be necessary to add enhancements to the stairwells to show an increase in stairwell use.
- Stairwell enhancements are likely to require additional maintenance. For example, replacement or cleaning of carpeting and repainting of walls may require approval by a number of sources.
- Different messages resonate with different target groups. The type and content of messages can have a positive or negative influence on stair use.

- PODP programs should be used as part of a comprehensive or multi-element program, as stand-alone efforts their influence on physical activity will not be substantial.

### Potential Action Steps

1. Use Stairwell Toolkits such as those listed below for sign ideas, tools, and evaluation.
2. Examine the stairwells to determine the condition and accessibility, as items such as: poor lighting, poor directional signage, and unsafe conditions may need to be addressed before implementing an intervention.
3. Discuss plans with the appropriate individuals and those responsible for the building under consideration for the intervention, including safety, administration, and maintenance.
4. Determine what kind of messages will appeal to the people you intend to reach. This will require some formative research. Messages can be inspirational, factual, health-related, or humorous. Some research has found differential effects depending on the audience and message type.
5. Discuss with stakeholders and decision makers. Point out that while the increase in stairwell use may be modest, even modest improvements can be significant in a large population. Given the relatively low resource requirements, stairwell projects can be a cost-effective way to begin or add another dimension to other interventions
6. To evaluate the intervention, tracking of stair use should be done before, during, and after the renovation phases. Possible ways to track include direct observation, video cameras, and infrared sensors.

### Program Example

An innovative example of a PODP with stairwell enhancements is the CDC developed StairWELL program. The following is adapted from “Promoting Physical Activity: A Guide to Community Action (9).

The **StairWELL for Better Health program** was a low-cost intervention that was implemented in stages over 3½ years.

Motivational signs, like the one shown were placed where people have the choice between stair and elevator use. The motivational messages for this intervention were tested in focus-groups to ensure they were motivating to the audience.



In addition to using point-of-decision prompts, CDC did enhancements to the stairwell. Carpeting was laid and rubber treading was added to each of the steps to maximize safety. Next, the walls were transformed by adding brightly colored paint, with each floor a different color. Framed artwork also was added to each floor, which featured people being active, photos of nutritious foods, and picturesque scenery. In a latter project one variation was a contest in which the winning employee’s art was hung in the stairwell and new art was rotated in periodically. Music was added to the stairwell via a digital

satellite music system which allows a variety of musical genres (e.g., classical, country, jazz, Latin, oldies, popular contemporary, and urban, among others) to be played.

Infrared beam sensors were used to collect baseline data and conduct ongoing data collection of stair traffic. Examples of innovations to the CDC StairWell program include Trivia Games where trivia questions were posted at the bottom of the stairs and answers provided at different intervals on the way up. The CDC Stairwell program has been very well received and has been incorporated into the Health and Human Services worksite health promotion efforts.

### Resources

1. CDC's "StairWELL to Better Health" Toolkit: This toolkit provides a step-by-step approach for planning a stairwell intervention. It includes downloadable stairwell signs.  
[http://www.cdc.gov/nccdphp/dnpa/hwi/toolkits/stairwell/other\\_ideas.htm](http://www.cdc.gov/nccdphp/dnpa/hwi/toolkits/stairwell/other_ideas.htm)
2. Let's Go! Maine Stairwell Toolkit. This website provides a turn-key program for implementing and evaluating a stairwell intervention.  
<http://www.letsgo.org/resources/documents/StairWELLCampaignToolkit2008.pdf?id=greenEmployeees&vid=v12>

### 3. Individually Adapted Health Behavior Change

#### Definition:

As described by the Community Guide, (5-7) this approach uses strategies that are tailored to an individual's specific interests, preferences, and readiness for change. One strategy is to teach behavioral skills to help participants incorporate physical activity into their daily routines, including building support for new behavioral patterns by creating social support networks or using existing social networks, reinforcing behavior through self-reward and positive self-talk, problem-solving geared to maintenance of the behavior change, and preventing relapse into sedentary behaviors. This intervention strategy is effective with diverse populations (e.g., among different racial/ethnic minority and socioeconomic groups) and in diverse settings (e.g., communities, worksite, schools, healthcare settings, health and fitness settings).

#### Rationale:

Although individually adapted behavior change programs have traditionally been used in clinical and small group settings, they also have a role in community-level efforts.

Increasing physical activity requires focusing on several factors across the social-ecologic framework and individually-adapted programs have often been used in community-based physical activity classes in worksites, schools and homes. (9) These programs can complement and enhance the effects of policy and environmental interventions. When communities, health care organizations, and other key sectors create environments and policies that support individual behavior change and systematize those policies, it is likely that individual behavior changes will be sustained. Incorporating individual physical activity interventions within settings that also focus on support of increased baseline and health-enhancing physical activities through the built-environment are likely to succeed. Additionally, while some people respond positively to standard physical activity programs, many people benefit from a personalized program that addresses the individual's readiness for change, special needs and/or desired outcomes (14).

#### Evidence of Effectiveness:

The Guide to Community Preventive Services rates the evidence as strong for individually-adapted behavior change intervention strategies. The recommendation for individually-adapted behavior change is based upon 18 studies where the median effect size was an increase in time spent in physical activity of about 35% and energy expenditure by 64%. These intervention strategies also increased other measures of physical activity, such as the percentage of people starting exercise programs and the frequency of physical activity. Since the original Community Guide review an additional review (9) examined a number of additional interventions, results confirm and extend those of the Community Guide. Many of these newer studies used telephone, email and other "mediated" strategies to prompt individual behavior change. Such strategies were found to be effective and can be integrated into mass media and community wide-campaigns. These interventions have been found to be effective in a variety of settings and with diverse populations. (9)

### Key Considerations:

- If delivered in an organizational setting, support from management is essential.
  - a. Because such programs rely heavily on the ‘choice’ and motivation of individuals to participate in the program and increase their activity, special efforts may be needed to minimize participant drop out.
  - b. Individualizing programs requires time and expertise of content experts, in general, the more individualized the program the more it costs.

As noted above, individual based programs are on the opposite end of the continuum from public health strategies that target whole populations. For public health programs, such interventions should be limited to specific target groups or preferably integrated into more comprehensive media or community-wide efforts.

### Action Steps:

1. With a multi-sector planning group, review how an individually-adapted behavior change program will fit into and complement the larger effort to address inactivity.
2. Identify and obtain resources that will allow the intervention to address individual differences in terms of interests, preferences and readiness to change behavior.
3. Review existing ‘packaged’ interventions that could be adapted to your program. These interventions should include theory-based strategies to shape behavior and induce behavior change, such as goal-setting, behavioral self monitoring, establishing social support, self-rewarding, problem-solving, and relapse prevention. Review the “Research-tested Intervention Programs” available on the Community Guide web site. Determine which of these related programs most closely relate to your program goals. See link below.
4. If the intervention is to be delivered in a worksite or other large organization, determine what programs may already exist to avoid duplication and discover possible program synergies.
5. If the intervention is to be delivered in a worksite or other large organization, discuss with and secure the support of upper management.
6. Clearly establish the roles and responsibilities of the multiple stakeholders planning and implementing the intervention. For example identify the specific roles and responsibilities of the public health department.

## Program Examples

- **HealthPLUS**, the City of Austin’s award winning worksite wellness program, has been serving City employees since 1994. The City of Austin offers a variety of services and activities that are designed to enhance the three areas of health represented by the wellness pyramid (physical, mental, emotional). There are ten programs hosted by the City of Austin Wellness Program.
- The wellness program consists of a blood analysis screening – the HealthSTART program, a comprehensive physical fitness assessment – FitSTEPS, and personal trainers who provide group sessions. In addition to receiving these services, employees get consultation regarding the results of the laboratory tests and fitness assessment. Supporting materials are given to participants to assist them in their fitness program.
- The HealthSTART program screens about 2200 employees or 20% of the total workforce every year. Additionally, FitSTEPS provides fitness testing and counseling for about 1000 employees. These programs are consistently filled to capacity each year.
- HealthPLUS: <http://www.ci.austin.tx.us/benefits/healthplus/#>
- City of Austin: Human Resources Department  
Employee Benefits Division – HealthPLUS
- **CHAMPS** (Community healthy activities model program for seniors)
- “CHAMPS” is included in the Community Guide as a Research tested Intervention. It is an individually tailored, choice-based physical activity program that promotes increased long-term physical activity levels in older adults. The program is based on social-cognitive theory. Program components include assessment of and training in self efficacy, readiness to change, and motivational skills. Intervention components include: meetings (classes), individual planning sessions, staff initiated phone calls, monthly workshops, diaries, newsletters, and fitness assessments. “CHAMPS” was initially designed for sedentary adults, 65 years or older in Medicare health maintenance organizations. Self- report baseline and follow-up physical activity measures indicate an increase in the intervention groups of 487 calories in moderate intensity physical activity and an overall increase of 687calories at any intensity compared to the controls. Control participants had no change in weight while the intervention group lost an average of 3 pounds. “CHAMPS” is considered suitable for community based settings.

## Resources

1. CDC’s Healthier Worksite Initiative website: This website is directed to worksite health promotion planners in federal and state government and provides information, resources, and step-by-step toolkits to improve employee health.

[www.cdc.gov/hwi](http://www.cdc.gov/hwi)

2. Research-tested Intervention Program (RTIP) this site is hosted by the National Cancer Institute and provides links to a number of interventions that have been found to be effective.

[http://rtips.cancer.gov/rtips/rtips\\_search.do?topicid=2&cg=30&choice=cguide](http://rtips.cancer.gov/rtips/rtips_search.do?topicid=2&cg=30&choice=cguide)

3. CDC's Arthritis Program lists 5 approved physical activity programs on their website. Some are arthritis-specific and some are programs for anyone.

[http://www.cdc.gov/arthritis/interventions/physical\\_activity.htm](http://www.cdc.gov/arthritis/interventions/physical_activity.htm)

#### 4. Enhanced Physical Education in Schools

##### Definition:

These interventions are characterized by key strategies that encourage youth to engage in enjoyable physical activity that is moderate to vigorous intensity. These strategies are implemented within the physical education class, but also can be applied in different youth-oriented settings, such as community and recreation centers, and after-school programs. (5-7) Enhanced PE Interventions, as reviewed by the Community Guide, had at least one of the following: increased percent of time during PE that students are moderately to vigorously active, additional PE classes within the school schedule, or longer PE classes. These reviewed interventions also included changes to PE policies, curricula, or teaching practices.

##### Rationale:

The 2008 Physical Activity Guidelines for Americans recommend that children and adolescents engage in at least 60 minutes of aerobic physical activity a day. Most students fall short of this goal. (2) In 2007, only 17.1% of 9-12 grade students were achieving the 60 minute recommendation. Although most physical activity occurs away from school, it is likely that increasing levels of physical activity in PE classes will help children and adolescents come closer to meeting the 2008 recommendation, particularly for students that live in communities with relatively few other opportunities for physical activity. (15) If schools implement enhanced school-based PE, it is also likely that students' level of flexibility, muscular endurance, physical activity-related knowledge, as well as overall physical fitness will improve. Implementing enhanced school-based PE is also appropriate because there is accumulating evidence that adding time to the school day for PE programs does not decrease academic performance and may contribute to improved academic outcomes. In addition enhanced school-based PE provides the opportunity to learn skills, such as self-assessment, self-management, and goal setting for physical activity that can lead to a physically active lifestyle. (15)

##### Evidence of Effectiveness:

Fourteen studies were included in the initial review of the Community Guide. Results included a median increase in time dedicated to PE by about 10% and time engaged in MVPA during PE by about 50%. This intervention strategy is effective with diverse populations (e.g., among different racial/ethnic minority and socioeconomic groups, boys and girls, elementary- and high-school students) and in diverse settings (e.g., rural, urban). (5-7)

##### Key Considerations

- It is important to have advocates for enhanced PE at every level of the organizational hierarchy. Developing a new or enhancing an existing school health council (SHC) may help



with the ongoing development, monitoring, and sustainability of an enhanced school-based PE program. The SHC is made up of a diverse group of individuals such as physical educators, health educators, food service staff, parents, community members, school administrators, school counselors, nurses, and students. The involvement of a SHC in establishing enhanced PE strengthens the capacity to improve and sustain PE policies, curricula, and instructional strategies and to coordinate efforts across many components of the CSHP model.

- School PE is not an intervention that is implemented by public health professionals. However, having public health professionals as advocates can help support and promote the short and long term health benefits and potential improvements in academic outcomes of enhanced school-based PE.
- Competing demands within schools (e.g., focus on standardized testing of 'core' subjects) can serve as a barrier to implementation. It is important for the lead PE teacher or the PE coordinator from the school district to serve as the lead advocate for enhanced physical education. Public health professionals can provide PE teachers and coordinators with resources, tools, and strategies to build advocacy and promotion plans for quality physical education
- Such programs have a wide range of stakeholders; all should be identified and efforts made to include them as advocates should be initiated at the outset.
- Additional resources (e.g., money, teachers, age-appropriate equipment) may be required in schools or other youth-oriented settings that do not have the necessary facilities, equipment, or staff.
- Increasing the length or number of PE classes will probably not be enough. In traditional PE classes, students are often inactive for half or more of the session. Changing the content of the PE curriculum and the way that PE teachers deliver the curriculum is also a critical element of enhanced PE. (15)
- Several enhanced PE programs are part of more comprehensive school health promotion programs and such integrated programs may contribute to the PE outcomes. (15)

### Action Steps:

1. Review effective programs such as SPARK (Sports, Play, and Active Recreation), and CATCH (Child and Adolescent Trial for Cardiovascular Health web sites for details guidance in planning and implementing enhanced PE (links below)
2. Examine the existing physical education curriculum to identify strengths and gaps. CDC's Physical Education Curriculum Analysis Tool (PECAT) (link below) enables users to analyze and enhance an existing written physical education curriculum or guide the development of a new curriculum and is based on the national standards.
3. Provide information and determine level of interest for this type of intervention from stakeholders and those who would be involved in implementation (e.g., PE teachers, principals, other teachers, coaches, parents, and students).
4. Secure commitment from all who would be involved in implementation. Be sure to have commitment from the school principal or program director.
5. Determine facility, equipment and staffing needs. Determine what resources may be needed.
6. Offer adequate training and ongoing technical assistance to all staff responsible for program implementation.

### Program Examples:

**CATCH (Coordinated Approach to Child Health:)** is a popular evidence-based, school health program. It includes in and out of classroom activities, home and after-school activities, and a family component. CATCH is designed to promote physical activity and healthy food choices in children.

**CATCH Texas:-** The El Paso CATCH program is an excellent example of a traditional CATCH program, adapted to local culture and resources. CATCH materials were translated into Spanish for use in a low-income community where most children had limited English proficiency. As is common for CATCH programs, stakeholders were engaged early in the process, funding was secured, staff were trained, and external experts included in program development and implementation. A broad range of stakeholders were included in partnerships designed to institutionalize the program. Tailoring of the program for the target school and students included changes in the characters in videos and curriculum such as changing “Hearty-Health and Friends” to “CATCH Amigos”. The nutrition curriculum was also tailored to include healthy Mexican dishes and ideas on how to promote fruit and vegetable consumption. Increases in MVPA ranged from 52 to 59% and the trend of increasing obesity prevalence was halted. (9)

**CATCH outside School:** While this is not strictly, an example of “enhanced PE”, it illustrates how strategies from the Community Guide can be used to enhance moderate and vigorous physical activity during other physical activity times.

**Monroe County, NY:** the county was awarded a 3-year grant totaled \$1.15 million to integrate the CATCH program into 40 YMCA after school child care program locations. Approximately 1,500 children were involved in this initiative. The YMCA of Greater Rochester integrated the philosophy of CATCH into the YMCA’s after-school child care program. YMCA childcare staff received training from a certified CATCH Program Director. Training was held at the beginning of the school year. Booster training was also delivered to all staff, including new staff, during the year. Staff received training to:

- Involve children in at least 30 minutes of daily physical activity.
- Involve children in moderate to vigorous physical activity (MVPA) at least 40% of daily physical activity time.
- Provide children with many opportunities to participate in and practice physical activity skills and behaviors that could be carried over into other times of the day and maintained later in life.
- Provide students with a variety of enjoyable physical activities.

Staff provided CATCH activities for students K-6 for 30 minutes daily. The goal was to have children be engaged in MVPA at least 40% of instruction time. Before the program was implemented, children were engaged in MVPA 38.2% of instruction time. One year after CATCH implementation, children were engaged in MVPA 61.2% of instruction time. Fifteen months after implementation, MVPA was 65.4% and 2 years after implementation, MVPA was 67%.

**YMCA of Greater Rochester:** <http://www.rochesterymca.org/>

**CATCH Texas:** <http://www.sph.uth.tmc.edu/catch/> and [www.catchtexas.org](http://www.catchtexas.org)

## Resources

1. School-Based Physical Education: Working with Schools to Increase Physical Activity Among Children and Adolescents in Physical Education Classes – An Action Guide. The Community Health Promotion Handbook: Action Guides to Improve Community Health. Washington, DC: Partnership for Prevention; 2008. This action guide was developed by Partnership for Prevention who has members from business, NGOs and government with a goal to improve health by identifying effective interventions and translating these results into appropriate policy solutions <http://www.prevent.org/actionguides>
2. Physical Education Curriculum Analysis Tool
3. This tool is used to by schools to conduct analysis of written physical education curricula, based upon national physical education standards. [www.cdc.gov/healthyyouth/pecat](http://www.cdc.gov/healthyyouth/pecat)
4. Sports, Play and Active Recreation for Kids! SPARK is a theory based and proven effective set of interventions to promote physical activity in youth [www.sparke.org](http://www.sparke.org)
5. Active Education: Physical Education, Physical Activity and Academic Performance Research Brief Summer, 2009. Active Living Research.
6. Active Living Research funds policy and environmental interventions to increase physical activity. Its web page provides research summaries, policy briefs and other valuable information on promoting physical activity.
7. [www.Active living research.org](http://www.Active living research.org)

## 5. Social Support Interventions in Community Settings

### Definition:

As defined by the Community Guide, social support interventions in community settings focus on building, strengthening, and maintaining social networks that provide supportive relationships for physical activity behavior change. New social networks can be formed or pre-existing networks in a social setting outside of the family, such as the workplace or community can be utilized.

Intervention components might include those such as setting up a “buddy” system, making “contracts” with others to complete specified levels of physical activity, or setting up walking or other groups to provide companionship, friendship, and support while being physically active. Participants might be connected to other participants and staff members to monitor progress and to encourage continuation of activities. Some programs or interventions involve formal discussion groups in which barriers and negative perceptions about activity are addressed. (5-7)

### Rationale:

Social support interventions may serve as an important precursor to, or component of, other physical activity interventions that focus on environment and access. Social support interventions are logical adjuncts to many other strategies because they provide venues for members to identify barriers and solutions to barriers to physical activity. They can also provide companionship and support to help group



members achieve their goals and remain in the program. (9, Chapter 4) Interventions that use social support within community settings may create opportunities for physical activity by reducing or eliminating many of the barriers to physical activity (e.g., safety, motivation). Because physical activity behavior is influenced at multiple levels of the socio-ecological framework, it is important to focus not just on policy or individual behavior change, but also on the interpersonal level. Building and strengthening social networks is

acknowledged as one of the goals and benefits of many of the newer social support based interventions. (2) This intervention strategy is effective with diverse populations (e.g., men, women, adults of different ages, people who are sedentary, people who are physically active) and in diverse settings (e.g., communities, worksites, universities).

### Evidence of Effectiveness:

The Guide to Community Preventive Services rates the evidence as strong for social support in community settings. The recommendation is based upon 9 studies where the median effect size indicates these interventions result in a 44% increase in the time spent being physically active, and a 20% increase in energy expenditure. (5-7)

### Key Considerations:

- Safety both perceived and actual, is a critical consideration when developing social support interventions that involve group physical activity. Safety can play a role in determining interest in participating and in the probability of dropping out.
- Consider social support activities that can be sustained year-round. In the case of walking groups, identify alternate indoor spaces for walking in inclement weather.
- Reminders and support in the form of telephone calls to and from participants may help sustain involvement and prevent or reduce drop-out.
- When using strategies such as buddy systems, these systems should be established such that they can create expectations and provide motivation and social support for the participants. For example, buddies might contract with each other, establish a regular routine for activity and communication, set goals, and determine rewards for meeting their goals.
- As with individually-adapted behavior change interventions, social support programs should be developed as part of a larger more comprehensive physical activity promotion effort.

### Potential Action Steps:

1. Review examples and suggestions for developing social support programs as described in the Handbook. (9)
2. Contact community members such as; neighborhood residents, community organizations, faith-based organizations, schools, health programs, pedestrian and trails advocacy groups who may be interested in forming walking groups or other kinds of activities that involve social support.
3. Establish strategies to develop critical program components such as walking buddies, telephone or e-mail reminders, or contracting with someone else to be active at specified times or for specified durations.
4. Plan and create walking group opportunities for your community.

### Program Examples:

**The Boston Public Health Commission created the “NeighborWalk”** program by organizing 56 walking groups in 7 racially diverse neighborhoods known for having a high prevalence of priority diseases and risk factors. The program provides an opportunity for local residents to join their neighbors in a walk of

the community at least once a week for 30 minutes to an hour. A walk leader for each neighborhood coordinates the activity by mapping the walking course, promoting the walk, distributing walk logs and providing incentives to participants. A post-walk survey is completed to get feedback on the walking route, frequency of the walks, changes in physical activity, and recommendations for the future.

Walk groups are comprised of participants from community based organizations including schools, churches and senior citizen organizations, tenant’s organizations, and community health centers. The average walk group consists of 10 people who walk an average of 2.4 miles per walk. In addition to the walks, each group hosts workshops on two different health topics each year. Representatives from the Boston Public Health Commission present on the topics that have been identified as important by the walk participants. According to a post-walk survey, program participants report an overall increase in their physical activity since joining NeighborWalk, including performing more moderate physical activity, and more walking at work, place-to-place, and for leisure.

**Boston Public Health Commission:** [www.bphc.org](http://www.bphc.org) Boston Steps [bostonsteps@bphc.org](mailto:bostonsteps@bphc.org)

Resources:

1. Sisters Together Move More, Eat Better is a national initiative of the Weight-control Information Network (WIN) designed to encourage Black women 18 and over to maintain a healthy weight by becoming more physically active and eating healthier foods. This site is hosted by the National Institute of Diabetes and Digestive and Kidney Diseases. <http://win.niddk.nih.gov/sisters/index.htm>
2. America Walks is a national coalition of pedestrian advocacy groups who promote walking and improved conditions for walking in communities. This site contains links to resources on forming walking advocacy groups, and related materials. [www.americawalks.org](http://www.americawalks.org)
3. Partnership for Prevention-Social Support for Physical Activity Action Guide provides information on establishing a community-based walking group program to increase social support of individuals wanting to improve their health and activity habits. <http://www.prevent.org/actionguides/WalkingGroup.pdf>
4. California’s Center for Physical Activity tool kit: “How to Start a Walking Program: A Guide for Local Program Coordinators.” This toolkit provides help for communities to create walk-able and bike-able neighborhoods. [www.caphysicalactivity.org/walkkit](http://www.caphysicalactivity.org/walkkit)
5. Action Steps for Establishing a Community-Based Walking Group Program to Increase Physical Activity Among Youth and Adults created by CDC and Partnership for Prevention. This Action Guide provides information on the resources and key steps to establish a community-based walking group program. <http://www.prevent.org/content/view/158/177/>

## **6. Create or Enhance Access to Places for Physical Activity combined with Informational Outreach.**

### Definition:

Interventions that create or enhance access to places for physical activity combined with informational outreach activities may involve the efforts of worksites, coalitions, agencies, and/or communities to change the local environment to create opportunities for physical activity. Many of these interventions are multi-component and influence behavior at multiple levels. These interventions usually combine both individual and environmental components and are long-term interventions. Individual components may include: health behavior education, training participants to use equipment, providing risk factor screening and referrals to additional services, health and fitness programs, and support or buddy systems. Environmental components may include the creation of walking trails, building of exercise facilities, or access to existing nearby facilities. This intervention is applicable among diverse populations (e.g., racial/ethnic minority and socioeconomic groups) and diverse settings (e.g., communities, universities, government agencies, and worksites). (5-7)

### Rationale:

Individuals may have the necessary knowledge, skills, attitudes, and motivation to be physically active; however, if they do not have access to the necessary opportunities, they may be restricted or prohibited from being active. Having access to places and opportunities for physical activity and knowing these opportunities exist is important in order to increase physical activity. Efforts to increase access may not lead to increased use, unless the community is involved and aware of the efforts. With community support and involvement, it is likely that increased access to physical activity opportunities will result in increased use.

### Evidence of Effectiveness:

The Community Guide rates the evidence for creating or enhancing access combined with informational outreach to places for physical activity as strong. The recommendation for creating or enhancing access to places for physical activity is based on review of 10 studies in which the median effect size suggests this intervention results in a 25% increase in the proportion of the population who are physically active at least three times per week. Most of the studies also reported weight loss or a decrease in body fat among participants. (5-7)

### Key Considerations:

6. Building or enhancing facilities for physical activity can be time and resource intensive. Having community support and identifying the necessary expertise can also be challenging.
7. Efforts to enhance access should also include informational outreach in the form of information, incentives and programs that are provided to build awareness of these new opportunities.

8. Activities that provide social support, such as group activities can further enhance use of facilities, equipment or other opportunities for activity.
9. Access is more than just presence of a facility. Ease of access and attractiveness of the destination are also critical factors in their use.

Action Steps:

1. Identify where there may be a need or opportunity to increase access to physical activity in your community by increasing access and/ or providing additional information about existing resources. For many people access is often limited because of lack of transportation, costs to participate, or by facilities that have physical barriers.
2. Identify and engage individuals or organizations that might provide resources, such as equipment (e.g, bicycles, protective gear, fitness equipment), facilities (outdoor or indoor spaces), or that could help participants develop the skills or knowledge to take advantage of the opportunities (e.g., bike repair, walking or other physical activity techniques or ways to improve safety). In addition to creating or enhancing facilities, places or other opportunities for physical activity, be sure to include various forms of informational outreach such as marketing and advertising, programmatic activities, skills training, and incentives.
3. Even simple messages and information should be developed for the target audience. Determine what type of informational outreach activities are most appropriate for the population you are trying to reach.



Program Examples:

**Neighborhood Bike Works (NBW)** is a youth development organization in West Philadelphia serving neighborhood youth from 8 to 18. NBW offers classes on bike repair and bike safety after school, on weekends, and in the summer. This program increases access to physical activity through the provision of bikes (equipment) and various associated activities and education (informational outreach) that would not otherwise be available to these youth. NBW offers several programs: the Youth Earn-A-Bike program, Realizing the Importance of Diet and Exercise (RIDE) fitness program, year round neighborhood rides, and access to the bike shop for repairs and enhancements. The Youth Earn-A-Bike program teaches bike repair and riding safety in 14 after school sessions or in two-week day camp sessions in the summer. Lessons include basic bicycle repair and maintenance, environmental awareness, general fitness and nutrition, safety and effective urban cycling. Students earn bicycles with helmets and locks and the knowledge of how to use the bike safely and keep them mechanically safe.

Classes involve both hands-on practical skills and written lessons.

<http://www.neighborhoodbikeworks.org>

**The Stanford University's Health Improvement Program (HIP)** was an employee health program that was designed to increase physical activity and decrease weight. The program was targeted towards male blue-collar employees in the skilled trades division of the operations and maintenance shops at Stanford University. Social and behavioral strategies were implemented as a means of enhancing participation in the exercise program. The intervention was a 16-week exercise course that utilized a nearby worksite parcourse. The parcourse consisted of 19 different activity stations placed around a 1 ½ mile course. The course combined strength activities (reported by the study participants as being a priority) with aerobic activity. Exercise classes occurred immediately after working hours and were offered to employees at no charge. Employees recorded their exercise sessions and participated in the incentive campaign through monthly drawings for inexpensive prizes (some donated by fellow co-workers.) This intervention was successful because the specific needs and interests of the target population was kept in mind during the development of the program and included their feedback when choosing a convenient time, location, and the type of exercises that would be part of the program. Additionally, most important to the participants was the garnered support from supervisors. (16)

**The Hawaii Department of Health's Friends for Fitness Coalition** funded community coalitions to promote physical activity in their communities. The Friends for Fitness coalition was born from this request for physical activity advocates. The group decided that they needed a safe, level place to recreate. The island of Kona is very mountainous and packed with lava fields. The terrain and a lack of sidewalks leave very few places to walk or jog safely. The group looked to the closed Old Kona Airport, which had a small walking path but was grossly overgrown, as a prime area for redevelopment. Friends for Fitness received a Centennial grant from the Rotary Club, which was critical in financing the equipment and materials needed to clear brush and debris from the path. The grant money also went to contract a local development company to excavate the center of the park, which was full of blue stone and very difficult to remove. After the excavation, the group put down sod and grass and landscaped the area. They planted edible gardens and installed "purple pipes", which attached to the treated wastewater system, for irrigating the park. Everything was constructed/watered by volunteers. The group continues to organize monthly clean-up dates.

<http://www.friendsforfitness.org>

#### Resources:

1. Partnership for Prevention-Places for Physical Activity Action Guide
2. This guide assists in facilitating community trail development and promoting its use among youth and adults. <http://www.prevent.org/actionguides/CommunityTrail.pdf>

## 7. Street Scale Urban Design and Land Use

### Definition:

Street scale urban design and land use policies support physical activity in small geographic areas, generally limited to a few blocks. The interventions use policy instruments and practices such as improving street lighting, increasing ease and safety of street crossings, introducing or enhancing traffic calming, enhancing aesthetics of the streetscape, and ensuring sidewalk continuity. (8)

### Rationale:

Neighborhoods that are safe, walkable, and aesthetically pleasing have been found to be associated with significantly greater amounts of walking than neighborhoods that have lower “walkability” scores. Improved pedestrian and cycling infrastructure may promote physical activity by making walking and cycling more appealing, easier, and safer. (17) One of the most frequently cited barriers to physical activity is lack of safe areas. Street-scale urban design and land use policies and practices may increase environmental supports such as safety, walkability, improved sense of community, decreased isolation, and reduction in crime and stress.(8) Environmental changes such as improvements in infrastructure have many advantages, mainly; once the changes are made they often endure for the life of the structure. They have a potential influence on most, if not all, those living in the community and sustained promotional efforts are not required.

### Evidence of Effectiveness:

The Community Guide rates the evidence for street-scale urban design and land-use policies and practices as sufficient. The recommendation for street-scale urban design is based on review of six studies in which the median increase in measures of physical activity was 35 percent. As will be described in greater detail in the section on transportation policy and infrastructure, community design and transportation elements are highly correlated and a substantial body of new research suggests their influences on physical activity are also interrelated. (17)

### Key Considerations:

10. Street-scale urban design and land use policies and practices are costly, can be more complicated, and take longer to implement than interventions that do not change, or only minimally change, the physical environment
11. This intervention requires careful planning and coordination among professionals such as: urban planners, architects, engineers, developers, local government, transportation and public safety departments, and public health professionals.
12. Neighborhood and/or community support is often essential and can take considerable time and effort to achieve.

### Action Steps:

1. Establish formal collaborative relationships with the appropriate planning, transportation, and development agencies. Be sure to include the bicycle and pedestrian coordinator in annual planning activities.
2. Advocate for or implement a Walking School Bus or other active transport initiative as a way to raise awareness of the need for improvements in the local pedestrian and road network to enhance non-motorized transport, such as walking and biking.
3. Identify streets that need changes or enhancements to make walking and being physically active safer and easier.
4. Collaborate with neighborhood residents to gather support in devising strategies for change. With local stakeholders, identify specific locations that can serve as an initial focus of action. Look for “low hanging fruit” or locations that can be improved with minimal effort and resources such as: adding cross walks, simple changes in road design such as narrowing roads from two to one lane or painting new lines on the road to guide and slow traffic, and other related traffic calming strategies.
5. Collaborate with nonprofit organizations, community groups, architects, urban planners, and neighborhood residents to advocate and ensure appropriate active living design standards in their community.
6. Learn more about and advocate to your local and state governments for the adoption of complete streets policies that serve to design the street to be useable by all modes of transportation and groups (cars, pedestrian, bicycles, handicap devices, etc).



### Program Examples:

**The City of Toronto** established a cycling committee that led an initiative of reallocating motor vehicle lanes to bicycle lanes. Between 1993 and 1998 the City of Toronto developed 40 Km (25 miles) of bicycle lanes. The conversion of motor vehicle lanes to bicycle lanes led to a 23% increase in bicycle traffic (1,230 cyclists per day of weekday traffic volume). In all cases bicycle-lane designs were customized to each street to accommodate local circumstances. In all cases, roads were reconfigured to accommodate cycling lanes. For example, four lane roads were converted to two lanes with on-street parking and bicycle lanes. In other areas, roads were narrowed during re-construction to slow traffic and widen the sidewalks. Key components of this intervention included:

- the establishment of Toronto City Cycling Committee with full time staff,
- a strong official plan in support of cycling,
- cycling committee hosting public meetings in neighborhoods where cycling lanes were proposed, and

- extensive public notification and meetings typically months before final council approval. (18)
- <http://www.toronto.ca/cycling/>

**The Sunnyside Piazza in Portland, Oregon** was the centerpiece of a neighborhood revitalization effort that began September 2001. This intervention was to convert a neighborhood intersection that was in disrepair into an attractive community gathering place by using artistic features intended to foster a sense of community. In the late 1990's, the neighborhood was experiencing deteriorating physical features, crime, and social disorder. To correct these problems, residents began monthly meetings and partnered with a local nonprofit organization whose mission is to create community gathering places in Portland. Through the help of local landscape designers and architects, the residents presented to the City Council, a modified ordinance that would support the intervention. After the ordinance passed, the residents raised money through local fundraising for materials. The residents used workshops, community discussions, design plans, and block parties to devise an artistic approach to solve their neighborhood problems. Improvements included an enhanced aesthetic streetscape at the intersection including a large sunflower street mural, a community kiosk with a solar powered lamp, an art wall, seating areas adorned with glass mosaic, and overarching trellised hanging gardens in front of nearby homes. Also, sidewalk repairs and improvements were made that included a canopy over a sidewalk fountain and curb extensions. (19)

[http://www.pps.org/great\\_public\\_spaces/one?public\\_place\\_id=504](http://www.pps.org/great_public_spaces/one?public_place_id=504))

Resources:

1. National Association of County and City Health Official's Land Use Planning 101 Resources. This website provides several resources and fact sheets for public health practitioners working with land use design principles.

<http://www.naccho.org/topics/environmental/landuseplanning/toolbox.cfm>

2. Complete The Streets. The Complete the Streets organization is a nationwide coalition focused on providing streets that are safe and used for multiple forms of transportation. This site provides educational information on Complete the Streets, fact sheets and policy elements.

<http://www.completestreets.org/>; [www.caphysicalactivity.org/walkkit](http://www.caphysicalactivity.org/walkkit)

3. U.S. Department of Transportation Federal Highway Administration.

View this page for the bicycle and pedestrian policy adopted by the U.S. Department of Transportation.  
<http://www.fhwa.dot.gov/environment/bikeped/index.htm>

## 8. Community Scale Urban Design and Land Use Policies and Practices

### Definition:

Community scale urban design and land use policies and practices to support physical activity in geographic areas, generally several square kilometers in area or more. These interventions use policy instruments and practices to develop and implement infrastructure projects to improve continuity and connectivity of streets, sidewalks, and bike lanes. Zoning regulations and roadway design standards that promote destination walking and co-location of residential, commercial, and school properties (i.e., mixed land use zoning), and transit-oriented development may also be characteristics of the interventions. (8)

### Rationale:

The physical design of communities, such as those used in community-scale urban design and land use policies and practices, provide permanent, sustainable environments that support physical activity. For example, when people are able to live near and get to destinations such as work, shopping, and entertainment without using automobiles, opportunities for physical activity via active transport are increased. Studies have demonstrated those who use public transportation are associated with higher levels of physical activity. (20) The process of engaging community residents, city planners, and developers in this intervention approach can help create communities that serve the needs of both citizens and businesses.

### Evidence of Effectiveness

The Community Guide rates the evidence as sufficient for the effectiveness of Community-Scale Urban Design and Land Use Policies and Practices. Twelve studies were included in the Community Guide review, and they found an overall median effect size of 161%, for some aspect of physical activity such as increases in the number of walkers or cyclists. As with street scale urban design interventions, the number of studies that qualified for review under the Community Guide criteria at the time of the last review was limited. However, since that time and using slightly different inclusion criteria, a larger number of studies have been reviewed and support the value of community design at the neighborhood, community, and regional level. Conclusions of these reviews were that each level of design has a significant influence on levels of physical activity and quality of life. These reviews include studies from the US Transportation Research Board, (21) the UK-based NICE studies (10) and commissioned reviews. Brief overviews of these findings will be provided in the section on transportation policy and infrastructure.

### Key Considerations

13. Community-Scale Urban Land Use and Design Policies and Practices is an intervention approach with potential for significant, sustainable impact; however, this approach is costly, requires extensive collaboration, and can take many years to implement.
14. The decision to make community design changes is based on many factors. Public health officials can bring health and quality of life forward as one important factor to consider.
15. It is important to have collaboration between local government and members of the community and to develop relationships and partnerships with organizations that benefit from having the community be more pedestrian and bicycle friendly such as schools, organizations that advocate for those with disabilities, and street-front or town center business owners.
16. Educating the public about the process of planning and development can empower the community to have a voice in the growth and development of their environment and lead to policies and practices that allow their communities to be designed such that the use of non-motorized transit is facilitated and supported.

#### Action Steps:

1. Plan and create activities such as group walking audits in your community, to help educate and raise awareness how community design affects physical activity.
2. Engage local media in educating community members and in advocating for communities that support physical activity through community design.
3. Educate and encourage community members to become active advocates and participants in local planning and development meetings.
4. Encourage community members and local decision-makers to participate in Health Impact Assessments and other kinds of community assessments.

#### Program Examples:

**Promoting Healthy Built Environments** is a collaborative between the Seattle & King County Public Health Department and the advocacy organization Feet First, to build walkable communities. A primary focus of the collaborative has been to be very active in design reviews (hosted by the Seattle Department of Planning and Development) and to encourage and support community involvement in these reviews. The design review is an opportunity for the public to comment on upcoming development plans. Historically, these meetings were poorly attended by the community and development plans were passed with little to no community involvement. The collaborative addresses this issue by attending design review meetings and providing input to planners and policy makers about community design policies and practices to make the Seattle area more walkable and bikeable. The collaborative has been very successful in adding public comment to the design review and in encouraging community members to attend and provide comments and concerns about proposed development. This kind of community input is an important precursor to the actual development of the policies and practices that result in physical changes to a community.

Seattle Pedestrian Advisory Board: <http://www.cityofseattle.net/spab/>

Feet First of Seattle: <http://www.feetfirst.info/act/organizations>

**Health Impact Assessment (HIA) of the Burien Town Center**, A HIA is a process by which a policy, program, or project is assessed as to its potential effects on the health of a population, including potential effects on physical activity. The Burien Town Center area is a suburban city, located just outside of Seattle had historically been automobile-dependent. The Town Center now has a bicycle and pedestrian plan, which the HIA will focus on assessing and informing in order to effectively facilitate non-motorized transit, such as bicycling and walking.

Brochure: [http://www.feetfirst.info/mapping/BeaconHill\\_text.pdf](http://www.feetfirst.info/mapping/BeaconHill_text.pdf)

Seattle Department of Transportation HIA page:

[http://www.seattle.gov/transportation/pedestrian\\_masterplan/pedestrian\\_toolbox/tools\\_ehe\\_hia.htm](http://www.seattle.gov/transportation/pedestrian_masterplan/pedestrian_toolbox/tools_ehe_hia.htm)

Feet First -

<http://www.feetfirst.info/aboutus> [info@feetfirst.info](mailto:info@feetfirst.info)

Public Health Seattle and King County (PHSKC)

<http://www.metrokc.gov/health/>

### Resources:

1. Health Impact Assessment
2. This site describes the use of Health Impact Assessment to evaluate the potential health effects of a project or policy before it is built or implemented. [www.cdc.gov/healthyplaces/hia.htm](http://www.cdc.gov/healthyplaces/hia.htm)
3. Active Living By Design
4. Descriptions and information about initiatives to increase physical activity through changes to community design are provided. [www.activelivingbydesign.org/](http://www.activelivingbydesign.org/)
5. Healthy Eating Active Living Convergence Partnership: Working together to create healthy people in healthy places.
6. Strategies for Enhancing the Built Environment to Support Healthy Eating and Active Living outlines a range of organizational practices and public policies being considered to improve the built environment in support of healthy eating and regular physical activity.
7. [http://www.convergencepartnership.org/atf/cf/%7B245A9B44-6DED-4ABD-A392-AE583809E350%7D/CP\\_Built%20Environment\\_printed.pdf](http://www.convergencepartnership.org/atf/cf/%7B245A9B44-6DED-4ABD-A392-AE583809E350%7D/CP_Built%20Environment_printed.pdf)

## 9. Active Transport to School

### Definition:

Active transport to school interventions are designed to encourage and support youth in engaging in active transportation (e.g., walking, bicycling, skating) to school. These interventions may be referred to by a variety of names (e.g. KidsWalk, Walk to School, Walking School Bus, and Safe Routes to School). They may involve urban design elements and practices, land use policies and practices to improve conditions for active transport, and non-infrastructure activities such as walking programs. This intervention can be implemented at elementary, middle, and high schools. (22-24)



### Rationale:

When schools are well-located, with safe sidewalks and pedestrian-friendly street crossings, children are more likely to walk to school. (23) These programs have the potential to increase physical activity and improve health among a large number of youth on a regular basis. Active transport to school interventions often use principles employed in urban design and land use policies and practices at both the street- and community-scale level. Therefore, these interventions have the potential to create sustainable environmental supports for supporting physical activity in the long term, not only for students of the schools, but for other community members as well.

### Evidence of Effectiveness:

Case studies collected and included in the 2008 Report of the National Safe Routes to School Task Force (23) indicate that these interventions can be effective in increasing physical activity, improving safety, and creating sustainable infrastructure to support physical activity. Based on an extensive review of programs across the nation, the Task Force recommended that the Safe Routes to Schools Program become a permanent feature of future transportation legislation.

### Key Considerations:

17. Implementing a successful, sustainable Active Transport to School intervention, particularly if permanent infrastructure changes are to be made, may require the efforts of a broad array of community members, disciplines and expertise (e.g., students, parents, teachers, school administrators, public health professionals, urban planners, architects, engineers, and developers).

18. Physical infrastructure changes to make active transport easier and safer may need to be preceded by programming such as the Walking School Bus, which increases awareness of environmental conditions that affect walking and other types of active transport to school.
19. Safety, actual and perceived, can be a significant barrier to Active Transport programs

### Action Steps:

1. Determine if there are local programs and/or activities like Safe Routes to School in your area. Identify stakeholders, organizations, and individuals within those groups that may provide assistance or collaboration for your walk to school efforts.
2. Collaborate with potential partners such as pedestrian groups, schools and school districts, parent-teacher organizations.
3. Keep key partners and stakeholders, such as parents, students, school leadership, neighbors and neighborhood associations near schools, local government, and environmental groups informed, involved, and invested in your active transport to school intervention.
4. Contact your [Safe Routes to School State Coordinator](#) for guidance on policies and project eligibility requirements in your state.
5. Provide training to local entities who wish to implement active transport to school programs.

### Program Example:

**At Bear Creek Elementary School in Boulder, CO**, 67 percent of the school's 360 students live within two miles of the school, however only 25 percent of students were walking or bicycling to school before Safe Routes to School was implemented. Most students were being driven in the family car. Federal Safe Routes to School (SRTS) funding for all states was approved in 2005. Since that time, parent involvement, strong school leadership, and shared funding with two other schools have helped encourage 70 percent of the school's students to walk or bike on a daily basis. The school's principal served as a role model for his students by hosting the Cruger Cup, a year-long challenge issued to his students to arrive at school every day without a car. The primary focus now is sustaining the increased walking that was achieved through the walking program. Infrastructure improvements as part of the intervention also made walking easier for students. For example, a foot bridge from adjacent Bear Creek Park and surrounding neighborhoods was repaired by the City of Boulder in October 2007. Other infrastructure changes have also been made by the City of Boulder through Forestry and Transportation Departments. Boulder Valley School District maintenance funds were used to open the school's bike corral and fence. In addition, the city's Traffic Engineer and Bike-Pedestrian Planner have played an integral role in addressing safety issues brought forward by concerned parents and school staff at two critical street crossings on the way to school. The city of Boulder received \$154,000 in infrastructure funds from the Federal SRTS program, through the Colorado Department of Transportation, to retrofit a nearby intersection by summer 2009.

Landon Hilliard, Safe Routes to School Administrator, Boulder Valley School District.  
[landon.hilliard@bvsd.org](mailto:landon.hilliard@bvsd.org) or 303-245-5931.

Resources:

1. National Center for Safe Routes to School. This site provides comprehensive information about safe routes to school. [www.saferoutesinfo.org](http://www.saferoutesinfo.org)
2. Pedestrian Bike Information Center Safe Routes to School training. This is a resource for individuals interested in receiving Safe Routes to School training. <http://www.pedbikeinfo.org/sr2s>
3. CDC's Kidswalk. This site describes and provides information and tools for implementing a walk to school program. <http://www.cdc.gov/nccdphp/dnpa/kidswalk/index.htm>.

## 10. Transportation and Travel Policies and Practices

### Definition:

Transportation and travel policies and practices can encourage active transport by facilitating walking, bicycling, and public transportation use; increasing the safety of walking and bicycling; reducing car use and improving air quality. Environmental changes that support these goals and that increase physical activity can be achieved by using strategies such as changing roadway design standards; creating or enhancing bike lanes; expanding, subsidizing or otherwise increasing the availability of and access to public transportation; providing bicycle racks on buses; providing incentives to car or van pool; and increasing parking costs. (9, 21)

### Rationale:

Creating options for travel other than by automobile has the potential to increase physical activity for a large portion of the population by providing opportunities for alternative transport, such as biking and walking, and by facilitating even modest increases in physical activity as part of using public transit, rather than private automobile. For example, taking public transportation involves at least a limited amount of walking to and from the transit stop to one's destination; walking that would not likely be necessary if travel were by automobile instead. Disincentives such as increased parking costs also have the potential to encourage and facilitate the use of alternative modes of transportation. These strategies also have the potential to improve air quality, green space, commerce, aesthetics, and decrease stress. (9)



### Evidence of Effectiveness:

The community guide reviewed the one available study at the time the initial Guide review was conducted. This study measured the proportion of university students who walked to school rather than driving, when free transit was made available. Six months after the intervention began 57% more students chose walking with a sustained effect of 14% one year later. Subsequent, reviews by NICE (10) and the Transportation Research Board (21) examined a wider range of studies and found evidence that a variety of transportation policies, as well as infrastructure-oriented and community design strategies, can be an effective way to promote both leisure time and transportation-related physical activity. The NICE review examined 26 studies across six main areas. In each case the preponderance of evidence was that slight to modest increases in walking and cycling (and outdoor play) were associated with these interventions.

Categories of interventions included:

- Traffic calming

- Introduction or expansion of multi-use trails
- Closing or restricting use of road by motorized traffic
- Road user charges (tolls)
- Improved cycling infrastructure
- Safe routes to school programs

Another review of this literature is provided by the Active Living Research group (17) This review summarized research on public transit, greenways and trails, school-related infrastructure and programs, pedestrian and bicycle facilities, and efforts to manage car traffic. Key research results relating to physical activity included:

- Public transit use is linked to higher levels of physical activity and lower rates of obesity.
- Walking or biking to school can help kids be more active overall.
- Sidewalks and bicycle lanes promote physical activity.
- Multi-use trails are associated with increases in walking and cycling, especially in urban area and among lower income populations.
- Traffic calming and safety measures protect residents and facilitate walking and bicycling.

### Key Considerations

20. Transportation policy and infrastructure interventions are often interrelated with neighborhood and community level design interventions. Integrating community design such as “Smart Growth” efforts with transportation initiatives such as “Complete Streets” and improved transit access could have significant and synergistic community-wide effects on physical activity.
21. Many transportation issues are determined locally, but many are under regional or national jurisdictions
22. The range of transportation policy and infrastructure interventions is tremendous, from low-cost restriping of streets for cross walks and devices to slow traffic to multi-million dollar regional enhancements of transit systems.
23. As with other community infrastructure decisions there are a wide range of stakeholders involved in the decision process. Departments of transportation and planning are often the lead agencies and public health, while a valuable addition, often plays a supportive partner role in these negotiations.

### Action Steps:

1. Convene the appropriate stakeholders such as, and most importantly, the state and local bicycle/pedestrian coordinator, transportation departments, and local government representatives.
2. Share the evidence of health benefits from good community design as many professionals outside public health are not aware of the potential direct and indirect health benefits of their programs.
3. With stakeholders conduct a Health Impact Assessment of the proposed project and demonstrate the potential health savings for design alternatives.

4. Consider pilot projects that can demonstrate success and engender expanded policy maker support.
5. Collaborate with the planning agency in the development of their short- and long- range master plans.
6. Determine what strategies might be implemented in the target community. These could include equipping buses with bike racks, policies that subsidize public transportation, roadway standards that require bike lanes, or policies that provide disincentives for nearby parking (e.g., higher parking fees).

Program Examples:

**Cycle-Friendly Employers project**

This project was designed to increase the number of employees who bicycle to work and increase use of the bike for official work trips such as site visits. Changes in policies and procedures included:

- Environmental changes to establish secure bicycle parking
- Workplace showering and changing facilities
- Bicycle mileage allowance for short journeys on official business
- Interest-free loans for the purchase of bikes and equipment
- Provision of company ‘pool’ bicycles
- Publicity and information material
- Promotional events
- Establishment of bicycle user group

Success included increases in the number of cyclists commuting to work and number of work trips taken by bike. (25)

**Activate Omaha**, an Active Living by Design community partnership, has steered the city from a place that is known more for cars than for its bicycling opportunities, to the home of a new 20-mile bike loop. Activate Omaha started a youth bike program that lends 20 bikes to local organizations who work with under-served youth. They have also created a bicycle commuter map that is being tested with current Commuter Challenge participants. Omaha Metro Area Transit equipped 130 buses with bike racks.

As a result of the visibility and success of the program, Activate Omaha was able to leverage enough funding to create a \$700,000, 20-mile bicycle loop around the city. The project will serve as a major connector to existing bike trails and other important destinations in the city.

[www.activateomaha.org](http://www.activateomaha.org)

**Sacramento CA, Partnership for Active Communities**

Examples of core partners in this project included: WalkSacramento, AARP California, Bannon Creek Traffic Tamers, North Natomas Transportation Management Association, Sacramento County Department of Health, and the Metropolitan Air Quality Management District office. Twenty additional agencies and groups served as resource or support partners. The partnership focused on programs and promotions to improve transportation policies and infrastructure including expanded walk and bike to

school programs. They also conducted systematic reviews of development projects to influence land use decisions. The project helped secure more than \$12 million in additional support for Safe Routes programs, and delivered more than 150 project reviews to city planners with recommendations for improved pedestrian and bicycle infrastructure based on the principles for improving transportation policy and infrastructure identified by the National Complete Streets Coalition. Complete Streets policies are now included in the region's transportation plan, in the mobility element of the city's updated general plan, the county draft circulation plan, and in the regional transit master plan. (26)

### Resources

1. Transportation Research Board's Special Report 282, published March-April 2005 Does the Built Environment Influence Physical Activity? Examining the Evidence. This resource summarizes what is known about relationships among physical activity, health, transportation, and land use and the strength and magnitude of any causal connections.  
<http://144.171.11.107/Main/Public/Blurbs/155343.aspx>
2. Active Living By Design: Transportation Essentials Toolkit: This site offers important resources to create transportation and land use systems supportive of walking, biking, transit and other more active forms of travel.  
<http://www.activelivingbydesign.org/events-resources/essentials/transportation>

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