

Strategies to Prevent Obesity and Other Chronic Diseases

The CDC Guide to Strategies to Increase Physical Activity in the Community



National Center for Chronic Disease Prevention and Health Promotion
Division of Nutrition, Physical Activity, and Obesity



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Strategies to Prevent Obesity and Other Chronic Diseases

The CDC Guide to Strategies to Increase Physical Activity in the Community

**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL CENTER FOR CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION
DIVISION OF NUTRITION, PHYSICAL ACTIVITY, AND OBESITY**



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Using This Guide

This document provides guidance for program managers, policy makers, and others on how to select strategies to increase physical activity in the community. It offers the most relevant information on each type of strategy. The discussion of each strategy follows the outline defined here.

Strategy

Describes an environmental change or policy-related activity intended to prevent disease or promote health in a group of people, also referred to in the literature as an *approach*. Criteria for inclusion of a strategy in this document are a rationale supporting the strategy and evidence that the strategy has been effective.

Definition

Briefly describes the strategy.

Rationale

Explains why the particular strategy is important to efforts to increase physical activity in the community.

Evidence of Effectiveness

Draws on peer-reviewed literature and current practice to summarize the evidence of the strategy's effectiveness.

Key Considerations

Includes information that may be important to keep in mind during the planning, implementation, or evaluation phases of a strategy.

Action Steps

Identifies specific activities for each strategy that public health professionals can take to implement strategies in specific settings, including communities, schools, child care facilities, work sites, and medical care facilities.

Program Examples

Includes examples of programs that use the strategy as a way to increase physical activity in the community. Program examples were selected from interventions described in other publications, such as peer-reviewed journals or program reports, or identified by key informants and through Internet searches.

Resources

Guides the reader to further materials and information that might be useful in planning, implementing, or evaluating the strategy.



Introduction to Physical Activity

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. To update the science in this area, 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 *2008 Physical Activity Guidelines for Americans*,² which strengthens and extends findings from the original Surgeon General's report.

These guidelines indicate that health benefits of physical activity include prevention of disease and reductions in risk factors associated with a range of diseases and conditions. Physical activity also is one of the elements in recommended treatments for obesity and other chronic conditions. Based on the existing evidence, these guidelines provide recommendations for physical activity for children and adults.

Benefits for Children

According to the *2008 Physical Activity Guidelines for Americans*, strong evidence exists that children and adolescents benefit from physical activity through improved cardiorespiratory and muscular fitness, bone health, cardiovascular and metabolic health biomarkers, and favorable body composition. In addition, moderate evidence exists that physical activity reduces symptoms of depression.

Benefits for Adults

For adults and older adults (aged 65 years or older), the list of benefits is much longer and includes lower risk of early death, diseases of the heart and vascular system, diabetes, and breast and colon cancer. Other benefits include weight loss (when combined with reduced calorie intake), improved cardiorespiratory and muscular fitness,

reduced depression, and prevention of weight gain. 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, reduced risk of hip fracture and lung cancer, and better ability to maintain weight loss.

Recommendations for Children

For children and adolescents aged 6–17 years, the *2008 Physical Activity Guidelines for Americans* recommends

- Sixty 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 also should be included at least 3 days per week.²

Recommendations for Adults

All adults should avoid inactivity, and adults who participate in any amount of physical activity gain some health benefits. The *2008 Physical Activity Guidelines for Americans* recommends that adults aged 18–64 years need at least

- Two hours and 30 minutes (150 minutes) of moderate-intensity aerobic activity (e.g., brisk walking) every week **or** 1 hour and 15 minutes (75 minutes) of vigorous-intensity aerobic activity (e.g., jogging or running) every week **or** an equivalent mix of moderate- and vigorous-intensity aerobic activity every week.
- Muscle-strengthening activities that work all major muscle groups (legs, hips, back, abdomen, chest, shoulders, and arms) on 2 or more days a week.



For additional and more extensive health benefits, these guidelines recommend that adults aged 18–64 years increase their aerobic activity to 300 minutes of moderate-intensity or 150 minutes of vigorous-intensity physical activity or an equivalent mix of both (categorized as “highly active”).²

For older adults (aged 65 years or older), the guidelines recommend the same amount of aerobic and muscle-strengthening activities as it recommends for adults younger than 64 years. In addition, older adults should do exercises that maintain or improve balance if they are at risk of falling.

Current Status

Despite the growing body of evidence of the health benefits of physical activity, most U.S. 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. Twenty-five percent did not participate in 60 minutes or more 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 goal of getting 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity aerobic activity per week, and only about 28% got 300 minutes of moderate-intensity or 150 minutes of vigorous-intensity activity per week.⁴

Strategies to Increase Physical Activity in the Community

As the evidence that physical activity has numerous physical, health, and emotional benefits has grown, the body of effective, evidence-based interventions also has grown. Several systematic reviews of this evidence have been conducted,^{5–9} and a textbook on the public



health approach to promoting physical activity has been published.¹⁰ These materials serve as the primary source for the recommendations provided in this publication.

From a public health perspective, some strategies merit a higher priority than others—such as those with the potential for greatest reach, effectiveness, and sustainability. Policy and environment strategies are integrated within the socioecological perspective. Based on these criteria and on expert opinion, the physical activity promotion strategies considered to be the most appropriate for public health agencies and their partners and to have the highest priority for implementation are community-wide campaigns, increased access to places for physical activity combined with informational outreach, and enhanced physical education in schools.

Strategy 1. Community-wide campaigns

Definition

Community-wide campaigns are large-scale, multicomponent campaigns that deliver messages by using media such as television, radio, newspaper columns and inserts, and trailers in movie theaters. They also are 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 work sites, schools, and community health fairs; and community events. They also include policy and environmental changes, such as opening school facilities to public use and creating walking trails.

Campaign messages can be directed to large and relatively undifferentiated audiences through diverse media and communication, or they can be tailored to fit the needs of specific populations. These interventions are usually sustained efforts with ongoing high visibility, and they usually 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 intended audiences. They also might be applicable in other settings that could be viewed as communities, such as universities and large work sites.⁵⁻⁷

Rationale

Traditional prevention efforts focus on educating and motivating people to help them increase their physical activity. Community-wide campaigns address multiple levels of influence, including individual, interpersonal, institutional, and community levels. These types of socioecological, multipronged efforts that are designed to promote and eliminate barriers have been found to be more effective than each single component.^{11,12}

Evidence of Effectiveness

The Task Force on Community Preventive Services’ *Guide to Community Preventive Services* (the *Community Guide*) rates the evidence as strong for community-wide campaigns. The recommendation for community-wide campaigns is based on a review of 10 studies that suggest that these campaigns result in a median increase of about 4% in the percentage of people engaging in physical activity and 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

- Although community-wide campaigns have wide reach and potentially greater benefit than less comprehensive interventions, they are also more resource-intensive and require well-trained staff. With large campaigns, it can be difficult to ensure an adequate “dose” or exposure to the intervention for all sectors of the community.



- Community-wide campaigns are not short-term interventions. They need to be sustained for a period of time in order to change the knowledge, attitudes, and behaviors of the intended audiences. Changes in knowledge or attitudes only are not appropriate end goals.
- It is 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. Achieving community buy in can require considerable effort.

Program Examples

Wheeling Walks

Wheeling Walks was a comprehensive, community-wide media campaign launched in Wheeling, West Virginia, that used social marketing strategies and advertisements similar to those used by private industry. Wheeling Walks was developed to encourage insufficiently active adults aged 50–65 years living in one West Virginia community to get 30 minutes of

physical activity each day. The program consisted of the following four phases:

- Community involvement.
- Message development.
- Intervention and evaluation.
- Policy and environmental actions.

The marketing strategy used print, television, and radio advertisements combined with walking challenges, work-site programs, and press releases. The campaign ran for about 1 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 among the intended audience.¹³

Wheeling Walks provides a comprehensive report on how to implement a similar campaign in other communities on its Web site at http://www.wheelingwalks.org/WW_TrainingManual/TM_index.asp.

Source: Wheeling Walks, Department of Community Medicine, West Virginia University School of Medicine.

Action Steps

1. Build or become a part of partnerships in your community that include local agencies and organizations that plan and implement initiatives that promote physical activity, such as parks and recreation centers; fitness facilities; and programs in schools, community and senior centers, and hospitals. 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, media personalities, and government officials.
3. Identify the intended audiences and conduct the campaign on the basis of your formative research.
4. Develop a program logic model that illustrates your program's theory of action and how community activities conducted by others relate to your program.



B.C. Walks

B.C. Walks was a community-wide campaign conducted by the United Health Services in Broome County, New York, to change behavior by promoting 30 minutes of daily walking among insufficiently active residents aged 40–65 years through paid media, public relations, and public health activities. The campaign included an intense 8-week multimedia blitz coupled with community activities.



A coalition of local human services agencies was created to promote community engagement and sustainability. A speakers bureau was developed to educate the community about B.C. Walks activities.

B.C. Walks bought 953 thirty-second advertisements during prime-time network television, 1,645 sixty-second radio advertisements, 1,314 thirty-second advertisements on cable television, and 10 quarter-page advertisements in the local daily newspaper. Local doctors and nurse practitioners were given prescription pads with the B.C. Walks logo 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 improvements to 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. Speakers from the speakers bureau made 42 presentations to a total of 1,492 people. Thirty work-site walking programs, with a total of 1,207 people, were established, and five schools, with about 2,000 students, also established walking programs.

In a follow-up survey, 78% of Broome County respondents reported hearing about the campaign. The percentage of older adults who reported an increase in walking was 34% higher in Broome County than in a control county.

Source: B.C. Walks, Steps to a HealthierNY, New York State Department of Health.



Resources

Social Marketing Resources

Centers for Disease Control and Prevention, Division of Nutrition, Physical Activity, and Obesity
Online training with other resources and background information.
<http://www.cdc.gov/nccdphp/dnpa/socialmarketing/index.htm>

Community-wide Campaigns

Activities and other information about this intervention strategy disseminated by the University of North Carolina Center of Excellence for Training and Research Translation.
<http://www.center-trt.com/index.cfm?fa=opstrategies.pa&page=community>

Wheeling Walks

Information to develop and implement a similar campaign.
<http://www.wheelingwalks.org/index.asp>

Wheeling Walks Training Manual

Step-by-step tool kit for conducting a community-wide campaign.
http://www.wheelingwalks.org/WW_TrainingManual/TM_index.asp

Steps to a HealthierNY

Learn more about B.C. Walks.
<http://www.bcwalks.com>

***Let's Move!* Campaign**

Print materials, Web site posts, videos, programs, and activities to promote this comprehensive initiative, launched by First Lady Michele Obama, in your community.
<http://www.letsmove.gov/resources#>

Strategy 2. Point-of-decision prompts to encourage use of stairs

Definition

For programs that promote physical activity, point-of-decision prompts include signs posted by elevators and escalators to encourage people to choose to use nearby stairs instead. The text on the signs can vary, but generally includes information about the health and weight loss benefits of using the stairs and serves as a reminder that stairs are available for use. Some programs that use point-of-decision prompts include enhancements to the stairwell—such as music, carpet, and art—to make the use of stairs more appealing.^{5–7,10}

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 physical activity. These types of programs require few resources, give people an easy way to include 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. Studies of stair use have been conducted in shopping malls, airports, office buildings, health care facilities, and universities. In at least one study, there was a greater increase in stair use by people who were overweight than by people who were normal weight.¹⁴ None of the studies reviewed by the *Community Guide* examined the effects of point-of-decision prompts 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.^{5–8,10}

Key Considerations

- Interventions that use enhanced point-of-decision prompts can take considerable time to fully implement, especially if multiple stairwell improvements are made.
- Point-of-decision prompts have been shown to be effective with the placement of signs alone. Therefore, it might not be necessary to add enhancements to the stairwells to increase stairwell use.
- Stairwell enhancements are likely to require additional maintenance. For example, replacement or cleaning of carpeting and repainting of walls might require approval by several sources (e.g., facilities staff, senior management).
- Different messages resonate with different audiences. The type and content of messages can have a positive or negative influence on stair use.
- Point-of-decision prompts should be used as part of a comprehensive or multielement program. As stand-alone efforts, they are not likely to have a substantial influence on physical activity levels.



Program Example

CDC's StairWELL to Better Health Program

The StairWELL to Better Health program was a low-cost intervention implemented in one CDC building in stages over 3½ years. Motivational signs were placed where people have the choice between stair and elevator use. Intervention messages were tested in focus groups to ensure that they were motivating to the audience.

In addition to using point-of-decision prompts, CDC also enhanced the stairwell by adding carpet and rubber treading to each step to maximize safety. The walls were painted bright colors (each floor is a different color), and framed artwork that features nutritious foods, picturesque scenery, and people being active was added to each floor. The intervention also included a contest to choose

employee artwork to be hung in the stairwell. In addition, music is provided through a digital satellite system that rotates a variety of musical genres, including classical, country, jazz, Latin, oldies, popular contemporary, and urban.

Infrared sensors were used to collect baseline data and to conduct ongoing data collection of stair traffic. Examples of innovations to the program include trivia games in which trivia questions were posted at the bottom of the stairs and answers were provided at different



Action Steps

1. Use the stairwell tool kits listed in the Resources section for sign ideas, tools, and information on how to conduct evaluations.
2. Examine the stairwells to determine condition and accessibility problems—such as poor lighting, poor directional signs, and unsafe conditions—that need to be addressed before implementing an intervention.
3. Discuss your plans with appropriate people in the departments responsible for the intended building, including safety, administrative, and maintenance staff.
4. Determine what kinds of messages will appeal to the people you want to reach. Formative research will be required. Messages can be inspirational, factual, health-related, or humorous. Studies have reported different results depending on the audience and message type.
5. Discuss your plan with stakeholders and decision makers. Emphasize that, although 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 implementation phases. Possible ways to track stairwell use are direct observation, video cameras, and infrared sensors.



intervals on the way up. The CDC StairWELL for Better Health program has been well-received and has been incorporated into the U.S. Department of Health and Human Services' work-site health promotion efforts.

Source: *Promoting Physical Activity: A Guide to Community Action.*¹⁰

Resources

StairWELL to Better Health Tool Kit

Centers for Disease Control and Prevention
Step-by-step guide to planning a stairwell intervention; includes downloadable stairwell signs.
<http://www.cdc.gov/nccdphp/dnpao/hwi/toolkits/stairwell/index.htm>

Let's Go! Maine's StairWELL Initiative Tool Kit

Turn-key program for implementing and evaluating a stairwell intervention.
<http://www.letsgo.org/resources/documents/StairWELLCampaignToolkit2008.pdf?id=greenEmployees&vid=v12>

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