Chapter 5:

A Summary of Evidence-Based Community Interventions to Promote Physical Activity in Midlife and Older Adults

Introduction

The Task Force on Community Preventive Services provides leadership in identifying effective community interventions to promote physical activity. Although convened by the U.S. Department of Health and Human Services, the task force is nonfederal and functions as an independent decision-making body. The task force conducts a rigorous and systematic scientific review of published studies. From these reviews, it determines whether sufficient evidence exists to recommend various interventions. Recommended interventions are classified as supported by either “sufficient evidence” or “strong evidence.”

Task force recommendations are published as part of the Guide to Community Preventive Services, commonly referred to as the Community Guide. This guide has become the definitive source of information about community approaches to address lack of physical activity and many other public health problems.

As shown below, the Community Guide currently recommends eight community interventions to promote physical activity. These interventions are classified according to three different approaches: informational approaches, behavioral and social approaches and environmental and policy approaches.
**Informational approaches to increasing physical activity include:**

1. **Community-wide campaigns** that involve multi-component interventions and messages directed at large audiences through different types of media. (Supported by “strong evidence.”) Many of the interventions implemented during the Active for Life™ (AFL) campaign were modeled on this Community Guide recommendation. AFL was a social marketing campaign supported by the Robert Wood Johnson Foundation (RWJF) and planned and implemented by AARP from 2002 to 2004. (For more information about this campaign see the other chapters in this guide.)

2. **Point-of-decision prompts** that encourage people to use the stairs as opposed to elevators or escalators. (Supported by “sufficient evidence.”)

**Behavioral and social approaches to increasing physical activity include:**

3. **Individually adapted health behavior change** programs that are delivered at the population level to groups of people, either in person or by mail, telephone or directed media. (Supported by “strong evidence.”)

4. **School-based physical education** interventions that ensure adequate class time for moderate- and vigorous-intensity physical activity for all students. (Supported by “strong evidence.”)

5. **Social support interventions in community settings.** These interventions build, strengthen or maintain supportive interpersonal relationships for physical activity behavior change. (Supported by “strong evidence.”)
Environmental and policy approaches to increasing physical activity include:

6. *Creation of or enhanced access to places for physical activity, combined with informational outreach activities* that increase awareness of the opportunities for physical activity in these places. (Supported by “strong evidence.”)

7. *Street-scale urban design and land-use policies and practices that support physical activity in small geographic areas.* These policies and practices might include street lighting, traffic-calming road features that slow motorists, and enhanced street landscaping. (Supported by “sufficient evidence.”)

8. *Community-scale urban design and land-use policies and practices that support physical activity in urban areas of several square miles or more.* These policies and practices might include zoning regulations that promote connectivity of sidewalks and proximity of residential areas to schools and recreation areas. (Supported by “sufficient evidence.”)

The *Community Guide* has deemed that the evidence for several physical activity-related interventions is insufficient to determine whether the interventions are effective. (Note that “insufficient evidence” does not imply an intervention is ineffective.) These interventions include the following:

- Classroom-based health education focused on information provision.

- Classroom-based health education focused on reducing television viewing and video game playing.

- Mass media campaigns. (Mass media messages are an appropriate part of community-wide campaigns and some other interventions but have uncertain effectiveness by themselves.)

- College-level physical education and health education.
Family-based social support.

Transportation and travel policies and infrastructure changes to promote non-motorized transit.

This paper focuses on five of the interventions recommended by the Community Guide that are effective in promoting physical activity among midlife and older adults: #1 (community-wide campaigns), #2 (point-of-decision prompts), #3 (individually adapted health behavior change programs), #5 (social support interventions) and #6 (access to and information about places for physical activity).

Discussion of these interventions is based on the evidence review published in 2002 (Kahn et al. 2002). Intervention #4 (school-based physical education) is not discussed in this paper because it does not apply to midlife and older adults. This paper also does not discuss interventions #7 (street-scale urban design) and #8 (community-scale urban design) covered by an evidence review published in 2006 (Heath et al. 2006). Such environmental and policy interventions are important, however, in that they have the potential to promote physical activity among people of all ages and can serve to complement and support all other evidence-based community interventions recommended by the Community Guide.

Purpose Of This Paper

While the Community Guide provides essential guidance for increasing physical activity among midlife and older people, practitioners still face challenges when selecting and implementing specific interventions recommended by the guide. For example, consider the guide’s recommendation to create or enhance access to places for physical activity. In what ways should a community improve access? Should a community build walking trails, reduce fees for existing exercise facilities or upgrade existing park and playground facilities? What evidence is available
to guide communities in selecting a specific intervention to improve access to places for physical activity?

The purpose of this paper is to review recommended community interventions that have the potential to increase physical activity in midlife and older adults and to describe the specific intervention components that were used in research studies. Summaries of these components are organized according to the five recommended \textit{Community Guide} interventions that target these specific age groups. These summaries focus on intervention components used in specific interventions of the research studies that contributed to the evidence on which the \textit{Community Guide} recommendations are based. These components are essentially “building blocks” that a community should consider when developing interventions to promote physical activity.

Interventions tested in research studies will need to be adapted to the specific situation and resources of a community. This adaptation process, often called “translation,” involves adding, deleting and modifying intervention components. A discussion of translation is beyond the scope of this paper.

\textbf{Terminology}

This paper’s usage of the terms “intervention” and “approaches” matches that of the \textit{Community Guide}.

- \textbf{Intervention}: In the terminology used by \textit{Community Guide}, an intervention is “any kind of planned activity or groups of activities (including programs, policies and laws) designed to prevent disease or injury or promote \textit{health} in a group of people.” (Zaza et al. 2005). The \textit{Community Guide} synthesizes the evidence from research studies to determine if an “intervention” is recommended. For example, “social support within community settings” is a strongly recommended intervention.
• **Approaches:** The *Community Guide* groups interventions under “approaches,” e.g.,
  “environmental and policy approaches.”

The concepts of a “specific intervention” and “specific intervention components” are implicit in the *Community Guide* review chapter and articles, but the *Community Guide* does not use these terms as they are defined here.

• **Specific intervention:** A research study tests a “specific intervention” and communities implement specific interventions. That is, a “specific intervention” is an instance or example of the intervention recommended by the *Community Guide*. Placing a sign that says “Use the Stairs” by an elevator in an office building is a specific intervention. Placing a sign that says “Climb the stairs and Burn Five Calories” by an escalator in an airport is a different specific intervention. However, both specific interventions implement the *Community Guide* intervention “point-of-decision prompts.”

• **Specific Intervention component:** The research studies reviewed by the *Community Guide* typically tested specific interventions that included more than one activity. For example, the specific intervention to build a walking trail in a city park could include: (1) developing a community coalition to advocate for a trail; (2) building an asphalt, multi-use trail; (3) putting in trail enhancements such as mileage markers; (4) publicizing the trail in newspapers and web sites; and (5) facilitating the formation of walking groups that use the trail. This paper refers to the various parts of a specific intervention as “components.”

**Interpreting the Intervention Summaries**

The intervention summaries presented in this paper list and describe specific interventions and intervention components, which are taken directly from the research studies reviewed by the *Community Guide*. One cannot conclude that a listed intervention component alone has been proven effective. Because research studies evaluate the overall effect of a multi-component
intervention, one cannot separate out the effects of each component by itself. However, the summaries do describe components of evidence-based interventions.

The organization of the evidence summaries is *ad hoc*. The specific interventions were analyzed for common themes and components, and then a classification system was created to fit these themes and components. For example, consider the recommendation: “creation of or enhanced access to places for physical activity, combined with informational outreach activities.” There are two obvious groups for the activities of the specific interventions tested by research studies related to this recommendation: activities that increase access, and informational outreach activities that increase awareness. However, several of these research studies also included health-promotion activities, and these were separated out into a third group. Also, in an *ad hoc* manner, the intervention summaries organized the activities in each group based upon details of the actual specific interventions. For example, some specific interventions enhanced access to physical places designed for physical activity. Other specific interventions increased access to “health-related activities” such as exercise classes.

Intervention components can be cross-cutting—that is, they can be used in several recommended interventions. For example, a component to increase knowledge about physical activity can be part of community-wide campaigns, individually adapted behavior change programs, interventions to increase access, and social support interventions. Therefore, such components are mentioned under more than one intervention summary.

**Issues in Planning and Implementing Evidence-Based Interventions**

The evidence review of the *Community Guide* provides four options that communities have when selecting specific interventions:

1. Select a specific intervention derived from a research study that implements a *Community Guide* recommendation. The obvious research studies are those reviewed by the *Community
Guide (Zaza, Briss, and Harris 2005). Note that the evidence review for the guide’s physical activity chapter is now several years old and that newer research studies are also available.

2. Select a specific intervention that is not derived from a research study but that nonetheless implements a Community Guide recommendation. For example, many possible ways exist to increase access to places for engaging in physical activity besides those tested in the 10 studies dealing with access that were reviewed by the Community Guide.

3. Select a specific intervention derived from a research study that does not implement a Community Guide recommendation. This situation can arise when there are too few studies of this type of intervention to determine if such interventions are effective. Some researchers refer to such specific interventions as “promising practices.” This situation can also arise when substantial evidence for an intervention has accumulated, but systematic evidence reviews have not yet been updated to take into account more recent studies.

4. Select a specific intervention that has never been tested in a research study and that does not implement a Community Guide recommendation (or a recommendation of any other systematic review).

Clearly, Option #1 is desirable, whereas Option #4 does not involve an evidence-based intervention and should be avoided. Options #2 and #3 are justifiable in some situations, particularly when the community has the resources to conduct a well-designed evaluation. However, Option #1 should offer most communities enough flexibility in choosing and adapting interventions, because there are eight separate recommendations and many existing research studies to guide specific interventions. As noted previously, this paper focuses on five Community Guide recommendations, which are discussed in the following sections.
Community-Wide Campaigns

Community-wide campaigns are large-scale, intense, highly visible campaigns delivered through a variety of methods to large audiences. These campaigns may focus only on physical activity, or they may include physical activity promotion as one component of a larger campaign, such as one that aims to prevent cardiovascular disease (Kahn, et al. 2002). Key elements of a community-wide campaign are partnership building; message delivery to a large audience using different types of media; and a coherent mix of programs, environmental changes and policy changes. Most, if not all, options for promoting physical activity are potential components of a community-wide campaign. Campaigns have included self-help groups, physical activity counseling, health fairs and construction of walking trails.

Partnership Building

*Identify and engage local leaders and organizations* in the development of the campaign components through such methods as community analysis and community organizing (Luepker et al. 1996). Community-wide campaigns can seek partnerships with organizations that share goals and interests or have common ground with each other and with the campaign’s sponsors (Catford and Nutbeam 1992). Involving the community at large in planning a campaign will help to increase the likelihood of a long-term community commitment to implementing that campaign (Luepker et al. 1996).

*Identify and engage role models and opinion leaders* who will promote and champion physical activity behavior change. Role models and opinion leaders can play key roles in promoting an overall health-promotion campaign, such as one aimed at reducing cardiovascular disease risk (Catford and Nutbeam 1992).
Message Delivery to a Large Audience

*Use community health education programs to promote physical activity.* Health education programs disseminate information about the benefits of physical activity and encourage people to engage in regular physical activity (Young et al. 1996).

*Use a variety of media outlets to disseminate information about physical activity.* Channels for disseminating information about physical activity include professional papers, electronic and print media, paid national advertisements on television and public service announcements on radio (Owen et al. 1995). Other ways to distribute information include posters, leaflets, stickers, T-shirts and sweat shirts (Owen et al. 1995). Weekly newspaper columns have been used to provide information to the public, as have billboards and educational materials, such as self-help kits (Goodman, Wheeler, and Lee 1995). Promotional efforts for specific (but smaller) audiences are an option. These efforts might include publishing health information in church bulletins (Goodman, Wheeler, and Lee 1995) or in an organization’s newsletter. Translating and adapting materials into various languages for different ethnic groups may be appropriate options.

*Organize local events to promote physical activity.* Information about physical activity can be disseminated at community events such as health fairs (Goodman, Wheeler, and Lee 1995), seminars or workshops (Young et al. 1996). To provide a source of potential speakers at such events, a campaign can recruit volunteers for a campaign-sponsored speakers’ bureau (Goodman, Wheeler, and Lee 1995).

*Develop and publicize a physical activity resource inventory.* A guide to community resources that support physical activity can be distributed to worksites (Goodman, Wheeler, and Lee 1995) and to prominent community organizations that serve the target audience. Web sites can host resource inventories that allow regular updates at a cost that is lower than the cost of updating printed materials. At the same time, a copy of the current inventory can be printed periodically.
Programs, Environmental Change and Policy Change

**Mix policy or environmental changes with existing programs.** Existing programs that involve physical activity, such as a cardiovascular disease prevention program, can be mixed with environmental changes (Tudor-Smith et al. 1998).

**Implement policy or environmental changes to promote physical activity.** Policy and environmental changes may include development of a health club for school-age children or walking trails for people of all ages (Catford and Nutbeam 1992).

Point-of-Decision Prompts

The six studies of point-of-decision prompts reviewed by the *Community Guide* all had a single intervention component: placement of signs to encourage stair use. The research suggested that the messages on the signs could be crafted to selectively influence population subgroups. For example, a sign that linked stair use to weight loss produced a greater increase in stair use among obese compared to non-obese people (Andersen et al. 1998). Multi-component interventions have been published since the *Community Guide*’s evidence review. These include a study in an office building that placed signs, remodeled the stairs and played various types of music in the stairwell (Kerr et al. 2004).

**Post signs or posters with messages to encourage stair use.** Signs have been posted at escalators or elevators in a variety of settings, including the following:

• Train or subway stations (Blamey, Mutrie, and Aitchison 1995; Brownell, Stunkard, and Albaum 1980).

• Bus terminals (Brownell, Stunkard, and Albaum 1980).

Individually Adapted Health Behavior Change Programs

Individually adapted health behavior change programs teach behavior management skills, and provide a social environment that supports regular physical activity. Programs are generally based on an established behavioral model, such as Social Cognitive Theory and the Transtheoretical Model of Change. Programs that promote physical activity teach skills that are related to recognizing cues and opportunities for physical activity, learning ways to manage circumstances associated with a high risk of relapse, and learning methods—such as goal setting and monitoring progress—that will help participants maintain an active lifestyle over time. The programs are individually adapted, in that physical activity goals and methods for attaining goals are tailored to each person’s specific interests, preferences and readiness for change.

Individually adapted health behavior change programs also provide a supportive social environment in which group members support each other and group leaders regularly contact group members to provide them with feedback, reinforce the progress they have made and offer encouragement. In this case, social support is an adjunct intervention component to the primary intervention of individually adapted behavior change. The next section on social support interventions shows that the situation can be reversed, with individually adapted behavior change components representing an adjunct intervention component to a primary intervention of social support.

So why were individually adapted behavior change programs categorized as a community-level intervention? These programs involve not just a specific intervention that operates at the individual level but also an intervention that is delivered at the community level, which may include physical activity classes or home-based programming. All studies reviewed for the
Community Guide tested a method of delivering the individually adapted behavior change interventions to groups of people in the community by using such methods as mail or directed media.

It is logical to combine individually adapted behavior change interventions with an opportunity to be physically active, such as an exercise class. In fact, this approach was common. Several studies included group exercise programs, such as: (1) an eight-week walking program that included a home-based telephone and mail intervention (Chen 1998); (2) a one-year, home-based or group-based exercise program (King et al. 1991, 1995); (3) a home-based resistance exercise program using an exercise video and resistance bands for older adults with functional limitations (Jette, Lachman, and Giorgetti 1999); (4) a 20-week walking program that encouraged participants to walk with an exercise leader three times a week (McAuley et al. 1994); and (5) a self-instructional, 12-week aerobic exercise program delivered either through periodic mailings or as a single packet (Owen et al. 1987). These types of group exercise programs are an opportunity to provide people with information about physical activity and to teach behavioral skills that help people initiate and maintain physical activity.

**Providing Information About Physical Activity and Instruction on Behavioral Skills**

* Distribute written information and self-help materials. Basic information about physical activity is important for behavior change (King et al. 1991, 1995). Such information about physical activity could be included as part of self-help booklets, such as those developed by the American Heart Association on starting and maintaining an exercise program (Chen 1998; Marcus et al. 1998) or as part of a walking kit, like one developed for a community-wide heart disease prevention program (Chen 1998). Alternatively, information could be distributed separately as exercise fact sheets about specific topics, such as stretching techniques, exercise safety and fitness-level assessment (Owen et al. 1987). Educational materials such as Age Pages, which is published by the National Institute on Aging, provide information relevant to physical activity goals of older adults (Mayer et al. 1994). Tip sheets can provide information on the benefits of physical
activity such as walking (Jarvis et al. 1997) or instructions on how to overcome barriers to physical activity (Chen 1998).

**Provide feedback based on self assessments of readiness to change and health risks.**
Programs may use health risk appraisal assessments to help people understand their risk for heart disease and premature mortality as well as how physical activity can modify these risks (Mayer et al. 1994). Programs also have disseminated materials to assess motivational readiness. These materials might include a computer-generated report that uses a 16-item decisional balance measure to summarize a person’s pros and cons of engaging in physical activity. Decisional balance materials can clarify a person’s perceived benefits of physical activity and suggest actions to reduce barriers to activity (Marcus et al. 1998). Self-help manuals can be matched to each stage of readiness for change, including pre-contemplation, contemplation, preparation, action or maintenance (Marcus et al. 1998). A motivational video that features positive physical activity role models (Jette, Lachman, and Giorgetti 1999) can also be used to encourage and assist people to become more physically active.

**Provide information, feedback and incentives, using computer technology.** Information and feedback about physical activity has been delivered through computer-generated telephone messages. As one example, people may receive one telephone contact per week after receiving training on using the messaging system (Jarvis et al. 1997). As another option, programs can assess a participant’s physical activity stage of motivational readiness and subsequently provide the participant with a computer-generated, tailored report and a self-help manual that matches the person’s stage of motivational readiness. This intervention can be designed to help participants think more about becoming physically active. It can also encourage participants to take steps to become more physically active or to initiate or maintain physical activity (Marcus et al. 1998).

**Teach skills related to structuring and monitoring a physical activity regimen.** Some programs provide information that allows each person to design an appropriate physical activity regimen for themselves (Dunn et al. 1999). An important goal in structuring a
physical activity regimen is to select enjoyable activities (Dunn et al. 1999). Programs may also provide information and instruction on how participants can monitor the intensity of their physical activity by monitoring their heart rate (King et al. 1991, 1995). During home visits, a physical therapist might instruct some older adults on appropriate exercises (Jette, Lachman, and Giorgetti 1999). Teaching participants how to gradually increase their progress toward physical activity goals is an important part of learning how to individualize an activity regimen (McAuley et al. 1994). Videotapes offer the opportunity to show age-appropriate role models doing physical activity properly and safely (McAuley et al. 1994).

**Teach skills related to goal setting, monitoring progress and rewarding success.** In addition to building skills to safely carry out physical activity, programs commonly teach the skills needed to set goals and monitor progress. Group leaders can demonstrate these skills by rewarding progress with, for example, verbal reinforcement (Dunn et al. 1999). People can learn to use behavioral contracts to set goals and specify rewards for physical activity (Jette, Lachman, and Giorgetti 1999; Mayer et al. 1994). Participants can learn to monitor their progress by using logs that record physical activity/exercise or attendance (Jette, Lachman, and Giorgetti 1999; King et al. 1991, 1995; McAuley et al. 1994).

**Use program staff to monitor progress.** Program staff can help monitor the progress of participants and allow people to compare themselves with other physical activity adopters and maintainers (Marcus et al. 1998). Staff also can conduct telephone calls to counsel participants on their progress: monitor their progress, answer questions and provide support and feedback (Jette, Lachman, and Giorgetti 1999; King et al. 1991, 1995; Mayer et al. 1994). Periodic meetings can be held to give participants progress reports (McAuley et al. 1994), feedback forms (Owen et al. 1987) or booster sheets that help them document their performance improvements, mastery of program requirements and goals (McAuley et al. 1994). A program can monitor participants’ stage of readiness for change each month and then provide intervention materials matched to the stage of readiness (Dunn et al. 1999).
Use program staff to provide feedback and incentives. Program staff can assess participants’ improvement each month on a timed walk (McAuley et al. 1994) or track improvement in the amount of resistance used in strength training (Jette, Lachman, and Giorgetti 1999). Preplanned counseling messages can help participants address problems and reinforce successes (Marcus et al. 1998). Modest incentives like stickers can be used to reinforce positive behavior or programs can offer participants $1 for turning in exercise logs (Jette, Lachman, and Giorgetti 1999). Program personnel may provide feedback and help participants “self-reinforce” progress by using a computer-generated report designed for this purpose (Marcus et al. 1998).

Providing a Supportive Social Environment for Behavior Change

Use program staff to provide social support. Social support can be provided as long-term follow-up after a structured exercise program or a lifestyle physical activity program. This follow-up could last from 12 to 18 months (Dunn et al. 1999).

Use small groups to provide social support. Small group meetings about cognitive and behavioral strategies can assist and support people to initiate and maintain a physically active lifestyle (Dunn et al. 1999). Small groups can provide cognitive restructuring to combat self-defeating thoughts (Jette, Lachman, and Giorgetti 1999). In addition, group participants’ physical activity self-efficacy (that is, confidence in their ability to be physically active) can be assessed and participants can be provided with computer-generated reports to reinforce or help them increase their level of self-efficacy (Marcus et al. 1998).

Use the telephone to provide social support to participants and to help them make their own plans to increase social support. An activity counselor can make structured telephone calls to participants throughout the physical activity intervention (Chen 1998). Telephone calls can also promote self-efficacy, encourage and enhance positive self-talk about walking, identify barriers to walking and allow participants to find solutions that will help overcome those barriers. The activity counselor can reinforce these telephone
calls with tip sheets about how to overcome barriers and with information about how to develop skills to prevent relapse (Chen 1998).

*Teach skills on how to increase social support for physical activity from friends, family and community.* After assessing the amount of positive social support for physical activity, a computer-generated report can describe ways to increase social support (Marcus et al. 1998). Assistance can be provided to increase social support by forming “buddy groups” that consist of two or three people who encourage each other to be physically active. Periodically, programs can give participants a written reminder (or “booster sheet”) to encourage them to support the other members of their buddy system (McAuley et al. 1994).

**Social Support Interventions in Community Settings**

Social support interventions focus on changing physical activity behavior by building, strengthening and maintaining social networks that provide supportive relationships for behavior change (Kahn, et al. 2002). These interventions involve either creating new social networks or working within existing networks, such as in the workplace (Kahn, et al. 2002). Program participants typically set physical activity goals and then work in groups to achieve those goals, providing social support for one another. Program staff may facilitate the group process of providing social support and/or they may directly provide social support to participants through such methods as telephone calls. Social support interventions commonly include adjunct components of individually adapted behavior change programs.

**Providing Social Support**

*Provide social support from peer groups for achieving physical activity goals.* Various structures for forming peer groups (including classes) have included the following: (1) a 10-week program of weekly group exercise and education classes (Blair et al. 1986b); (2) aerobic activity supervised by an exercise leader four times per week (Robison, Rogers,
and Carlson 1992); (3) brisk walking sessions monitored by a physical activity counselor on six days per week (Coleman et al. 1999); and (4) an eight-week training program with most social support provided by exercise leaders, followed by either group walking sessions or walking alone (Kriska et al. 1986). Identifying buddy groups whose members hold each other responsible for regular physical activity is a basic method of social support. Some programs encourage involvement from “significant others” in walking groups and other activities to support physical activity (Kriska et al. 1986). Peers have provided social support for setting physical activity goals (Coleman et al. 1999; Robison, Rogers, and Carlson 1992) and peers can be used as a source of feedback on meeting these goals (Robison, Rogers, and Carlson 1992).

**Provide social support from program staff.** Program staff often use telephone methods to provide social support, with differing frequency of calls: (1) a 12-week walking program using telephone prompts to encourage participants to walk three times a week (Lombard, Lombard, and Winett 1995); (2) telephone support for home-based exercise emphasizing frequent, short (five minutes) calls (King et al. 1988b); and (3) telephone support that is tailored to participants’ stage of readiness to be active (Marcus et al. 1998; Peterson and Aldana 1999). Support can also be provided during occasional home visits (Kriska et al. 1986).

**Supplementing Social Support Interventions with Other Interventions**

**Supplement social support interventions with components of individually adapted behavior change interventions.** Health-risk appraisals can inform participants about their health status and motivate change (Blair et al. 1986b; Marcus et al. 1998). Programs have provided motivational materials (Peterson and Aldana 1999), maps with safe and enjoyable walking routes (Lombard, Lombard, and Winett 1995) and handouts on how to find walking partners and start a walking program (Lombard, Lombard, and Winett 1995). Programs can teach people to use behavioral contracts and can help them to identify and solve barriers to fulfilling those contracts (Coleman et al. 1999). Efforts can be made to conduct an initial session to train participants to start a walking group and
complete weekly walking logs (Lombard, Lombard, and Winett 1995). Programs can also provide regular assessments and feedback on physical activity levels and fitness (Blair et al. 1986b). In one walking program, participants met weekly with a counselor to obtain regular feedback (Coleman et al. 1999). Activity logs have been used to provide feedback and train people in self-monitoring (King et al. 1988b). Programs have taught self-management skills (Coleman et al. 1999) and skills related specifically to relapse prevention (Peterson and Aldana 1999); some programs have provided awards in the form of buttons that recognize participants who have walked various amounts of mileage (Kriska et al. 1986). Individual achievements in a walking program can be chronicled and reinforced by listing those achievements in regular newsletters (Kriska et al. 1986). Programs can provide financial incentives, such as asking participants to forfeit part of a $40 reward if they fail to attain their goals (Robison, Rogers, and Carlson 1992).

Supplement social support interventions with health education. Physical activity training also can be provided (Lombard, Lombard, and Winett 1995) through face-to-face sessions or videotaped instructions (King et al. 1988b). Programs can train people to monitor the intensity of their exercise by using the Borg Scale (Coleman et al. 1999; King et al. 1988b).

Creating/Enhancing Access to Places for Physical Activity, Combined with Informational Outreach Activities

Though physical activity can be performed almost anywhere, some locations are specifically designed or intended as places for such activity, including swimming pools, soccer fields, school gymnasiums, walking trails, city parks and health clubs. A community promotes physical activity by creating or improving access to such places.

In identifying specific interventions to improve access, it is useful to imagine a place for physical activity that perfectly meets the needs of a community. The most obvious intervention to improve access is to provide such a place to a community that lacks one. Access is also improved
by eliminating barriers to a community’s use of an existing place for physical activity, such as concerns about safety. Improving existing facilities in a way that is consistent with community needs and preferences is also regarded as enhancing access. If people prefer having a walking trail with mileage markers, for example, then adding mileage markers to an existing trail will enhance access.

Of course, community facilities won’t be used unless the community is aware of them. Therefore, the recommendation also includes outreach activities that publicize places for conducting or participating in physical activity. Some specific interventions reviewed by the Community Guide commonly did more than informational outreach, and provided additional health promotion programmatic activities.

The Community Guide recommendation regarding access does not apply to interventions that change the general infrastructure of a community by changing places whose primary purpose is not related to physical activity but nonetheless offer some opportunities for it. Such interventions are addressed by other recommendations, including transportation system (insufficient evidence), street-scale community design (sufficient evidence), and community-scale urban design (sufficient evidence) (Heath et al. 2006).

Enhanced Access to Trails, Equipment and Programs

Provide a range of places for physical activity throughout the community. New exercise space can be provided at a community site, along with provision of exercise equipment (Henritze, Brammell, and McGloin 1992). A par course can be added to outdoor space (King et al. 1988a). A community site with exercise space can be located near a workplace (Blair et al. 1986a) or other frequently visited site, such as a community center or senior center. Access is improved by providing new equipment at existing recreation facilities (Linenger, Chesson, and Nice 1991). Opening a women’s fitness facility improves access for a specific population subgroup (Linenger, Chesson, and Nice 1991). A walking and fitness path (Brownson, Smith, and Pratt 1996), a bicycle path, or a 1.5 mile running course in the community can improve access to places for physical activity.
in natural environments (Linenger, Chesson, and Nice 1991). Worksite walking paths can encourage people to walk on their own time and can be enhanced by adding places to “stop and stretch.” (Heirich et al. 1989.) Stop-and-stretch places may also include benches so that users can walk at their own pace and adults who are less fit can use the facility.

**Increase the availability of health-related activities in the community.** The availability of physical activity classes (Henritze, Brammell, and McGloin 1992), activity clubs, or walking and low-impact aerobic programs for older adults can be increased. Availability is increased when exercise groups (Brownson, Smith, and Pratt 1996) meet at a variety of times or offer extended hours so that employees can participate in programs after the work day is over (King et al. 1988a). Health-related activities include physical activity competitions (Henritze, Brammell, and McGloin 1992) and athletic events that a subgroup of adults may enjoy (Heirich et al. 1989). Community events can provide meaningful opportunities for physical activity. For example, even though a race is a discrete one-time event, increasing the number of 5K and 10K races for walkers and runners increases access to health-related activities in a community. (One-time events also provide outlets for event organizers to publicize other physical activity opportunities, such as community walking trails or bicycle paths, or parks and recreational programs.) Communities have sponsored annual, heart-healthy fitness festivals that include exercise demonstrations; registration for exercise classes and walking clubs; and screenings for hypertension, diabetes and cholesterol (Brownson, Smith, and Pratt 1996). Communities have also promoted opportunities for simple physical activities that adults undertake at their own convenience and pace while socializing with friends (Heirich et al. 1989).

**Health Education and Informational Outreach**

*At the workplace, educate employees about health risk factors and the availability of facilities and programs for physical activity.* A variety of materials can inform employees about opportunities for physical activity, and encourage them to participate. These materials include individual invitations, electronic messages via employees’
computers, poster displays throughout the workplace, and displays of tray mats and table tents in the employee cafeteria (Henritze, Brammell, and McGloin 1992). Newsletters, health fairs, contests and information displays in cafeterias, hallways and restrooms can promote opportunities for physical activity as part of highly visible health education and promotion campaigns (Blair et al. 1986a). Materials may provide information about regular exercise (Blair et al. 1986a; Breslow et al. 1990). Employees can be invited to participate in a lifestyle seminar where they learn about worksite opportunities to improve physical activity as part of adopting a healthier lifestyle (Blair et al. 1986a; Breslow et al. 1990).

*Educate the public about the importance of behavior change* through a “Heart Healthy” corner in the local newspaper (Brownson, Smith, and Pratt 1996).

**Health Promotion Activities That Encourage Use of Places for Physical Activity**

*Build partnerships that promote opportunities for physical activity in a community.* Community partners may select their own priorities (or mutual goals) from a list of possible program activities (Brownson, Smith, and Pratt 1996). Community leaders and residents can be enlisted to promote and champion opportunities for physical activity in order to increase program participation and attendance (Lewis et al. 1993; Brownson, Smith, and Pratt 1996).

*Use contests to provide incentives for regular physical activity.* Contests and other activities where everyone can succeed will bring physical activity opportunities to the attention of employees (Heirich et al. 1989). Walking contests among teams of employees make use of places for physical activity, such as walking trails (Heirich et al. 1989). Regular contests, which could be held monthly, can encourage participation in physical activity (King et al. 1988a).

*Use feedback to provide incentives for regular physical activity.* Opportunities for physical activity can be increased by offering short-term incentives for individuals and
groups (King et al. 1988a). For example, to enhance participation in a worksite exercise program, staff could post feedback in a public place about the progress of program participants (King et al. 1988a), highlight or publicize names of top performers (Linenger, Chesson, and Nice 1991) or provide social support and reinforcement to program participants as part of feedback regarding improvements in their fitness test scores (Linenger, Chesson, and Nice 1991). Programs can help participants monitor their physical activity levels by recording all exercise sessions done at work or at home (King et al. 1988a).

Use financial incentives for regular physical activity. The cost of informational services and classes can be shared between employers and employees using co-pays, where employers pay most—perhaps two-thirds—of the costs (Heirich et al. 1989).

Use individually adapted behavioral change programs. One-on-one counseling about physical activity can be provided (Heirich et al. 1989, 1993; Henritze, Brammell, and McGloin 1992). Counseling involves individualized encouragement to help people engage in physical activity on their own time (Heirich et al. 1989, 1993). A combination of counseling, social support and simple, accessible exercise activity can be offered to inactive employees (Heirich et al. 1993). Regular counseling may be conducted by health professionals and tailored to specific health risks and conditions of a person (Heirich et al. 1993).

Summary

Persons and partnerships wishing to conduct community-based interventions to promote physical activity can select from numerous effective intervention options as identified in the Community Guide and described in this paper. State-of-the-art physical activity interventions typically include multiple components. Components from one type of intervention, such as social support interventions used in community settings, have been included as part of other intervention types, such as individual health behavior change interventions and interventions to encourage access.
and use of places for physical activity. Interventions that have been shown to be effective will most likely need to be tailored to the unique needs and preferences of a community and integrated with the community’s existing health promotion activities. This may require that an intervention described in the research literature be modified to some extent prior to use in another community setting. Due to scarce resources, it is prudent to model community-based physical activity promotion efforts on effective interventions, such as those identified in the Community Guide. However, it is equally critical to evaluate intervention effectiveness, and this becomes especially important the more an effective intervention is adapted to meet the needs and interests of a community.

References


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