

## Dollars, Health, Lives

### The importance of exercise interventions

“Our health is determined by our personal behaviors, our genetic makeup, the clinical care we receive, the actions of our public health system, and the environment of our community. While we cannot control our genetic makeup, we have a good deal of control over our personal behaviors and can make healthy decisions to not smoke, eat healthy foods, use our seatbelts, and exercise regularly.”<sup>1</sup> Though most “Americans believe that it is important that they do more to prevent their own health problems...few believe that preventable diseases and injuries are a major health problem.”<sup>2</sup> We have a tendency to exhibit great concern about serious but uncommon diseases...and yet little concern about diseases that constitute the majority of deaths on



a daily basis – such as heart disease and injuries.”<sup>2</sup>

We know that poor diet and physical inactivity are second only to tobacco use as leading causes of preventable death in the U.S.<sup>3</sup> Yet, as a country, the majority of U.S. adults (75 percent) are not physically active at the levels recommended for health (i.e., 30 minutes of moderate-intensity physical activity on most, preferably all, days). In fact, 29 percent of U.S. adults report *no* leisure-time physical activity at all.<sup>4</sup> Additionally, only 27 percent of youth (grades 9–12) report engaging in recommended amounts of moderate-intensity physical activity – leaving 73 percent either inactive or not active at levels recommended to promote good health.<sup>4</sup>

“Achieving minimum physical activity levels of 30 or more minutes per day will require a variety of intervention strategies to engage an aging and increasingly ethnically diverse U.S. population.”<sup>5</sup> The cost of failing to disseminate effective physical activity interventions to underserved populations<sup>5</sup> in particular, but also to the U.S. population as a whole, in places that make physical activity accessible, safe, affordable, and motivational continues to mount in dollars, health, and lives.

This issue of *HealthHints* will take a look at what we know about best practices and programs for effective physical activity interventions that you may be

“While we cannot control our genetic makeup, we have a good deal of control over our personal behaviors...”

able to utilize personally, or in local populations (e.g., worksites, community-wide programs, etc.), to serve your individual fitness needs or the needs of those around you.

#### Six Interventions

##### Strong evidence

Strong evidence from multiple scientific studies validates six types of intervention for improving rates of physical activity...benefiting the individual and the population in dollars, health, and lives:

- point-of-decision prompts,
- community-wide campaigns,
- school-based physical education (PE),

- community social support,
- individual health behavior, and
- enhanced access.<sup>6</sup>

These six interventions can be broken into three important categories:

- informational approaches (i.e., point-of-decision prompts, community-wide campaigns),
- behavioral and social approaches (i.e., school-based PE, community social support, individual health behavior), and
- environmental and policy approaches (i.e., enhanced access).<sup>4</sup>

### Informational Approaches Motivating & enabling people to change

“Informational approaches focus on increasing physical activity by providing information that will motivate and enable people to change behavior and to maintain that change over time.... The interventions primarily



use educational approaches to present both general information, including information about cardiovascular disease prevention and risk reduction, and specific information about physical activity and exercise.”<sup>4</sup> Information is intended to:

- change knowledge about the benefits of physical activity,
- increase awareness of opportunities for physical activity,
- explain methods of overcoming barriers and negative attitudes about physical activity, and

## The Human & Economic Value of Exercise Intervention

Physical inactivity is a leading contributor to disease and disability, “accounting for 22 percent of coronary heart disease, 22 percent of colon cancer, 18 percent of osteoporotic fractures, 12 percent of diabetes and hypertension, and 5 percent of breast cancer.”<sup>4</sup> In addition to these costs in disease, disability, and death, “physical inactivity accounts for about 2.4 percent of U.S. health care or approximately \$24 billion a year.”<sup>4</sup>

- increase physical activity among community members.<sup>4</sup>

Based on an extensive review of research in this area,<sup>7</sup> informational approaches with the most evidence for success include the use of point-of-decision prompts and community-wide campaigns.

### Point-of-Decision Prompts

Point-of-decision prompts are signs placed by elevators and escalators to motivate people to use nearby stairs.<sup>7</sup> Messages on the signs recommend stair use for health benefits or weight loss. Signs are thought to be effective in one of two ways:

- by reminding people already predisposed to becoming more active, for health or other reasons, about an opportunity at hand to be more active; and
- by informing them of a health benefit from taking the stairs.<sup>7</sup>

Findings from several studies suggest tailoring the prompts by specifying the benefits of stair use or by customizing the sign to appeal to specific populations, which may increase intervention effectiveness.<sup>7</sup>

### Community-Wide Campaigns

Community-wide campaigns are large-scale, sustained, multi-

faceted efforts with high ongoing visibility. These campaigns deliver messages that promote physical activity using television, radio, newspaper columns and inserts, and trailers in movie theaters. They also use many components, including:



- individually focused efforts such as support and self-help groups;
- physical activity counseling;
- risk factor screening and education at worksites, schools, and community health fairs; and
- environmental activities like community events and creation of walking trails.<sup>4</sup>

Although we will look at some of these types of interventions individually, in the case of community-wide campaigns, the combined package of interventions was evaluated since they were done together; contributions of each component could not be distinguished alone.<sup>7</sup> Community efforts are essential to create a social environment that promotes physical activity<sup>8</sup> as well as healthy behaviors.

## Behavioral & Social Approaches

### Support for physical activity

Behavioral and social approaches focus on increasing physical activity by teaching behavior management skills and by structuring the social environment in ways that provide support for people trying to start or maintain physical activity (the behavior change for which we are striving).<sup>4</sup> These interventions often involve family, friends, or other groups (those who make up the person's social environment). Interventions in this category may also involve making changes in the home, family, school, and work environments. Skills focus on recognizing cues and opportunities for physical activity, ways to manage high-risk situations, ways to maintain desired behaviors, and ways to prevent relapse.<sup>4</sup>

Based on an extensive review of research in this area,<sup>7</sup> behavioral and social approaches with the most evidence for success include school-based PE, community social support, and individual health behavior interventions.

### School-Based PE

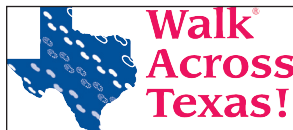
Interventions in school-based PE strive to increase the amount of time students spend in moderate or vigorous physical activity while in PE class.<sup>7</sup> This increase can be done in several ways:



- adding new or additional PE classes,
- lengthening existing PE classes, and
- increasing moderate to vigorous physical activity of students during PE class without lengthening the class time (e.g., substituting soccer for softball; modifying softball/baseball so that the whole team runs the bases when a batter gets a hit; etc.).<sup>7</sup>

### Community Social Support

Community social support interventions focus on changing physical activity behavior by building, strengthening, and maintaining social networks that provide supportive relationships for behavior change – specifically physical activity.<sup>4</sup> This support can be achieved by creating new networks or working within pre-existing networks in social settings outside the family (note: family is a major source of influence for children in modeling health behaviors),<sup>7</sup> such as worksites. Interventions typically involve:



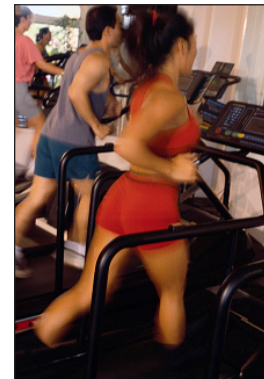
- setting up a “buddy” system,
- making a “contract” with others to complete/achieve specific levels of physical activity, and
- setting up walking groups (e.g., [Walk Across Texas](#)) or other groups to provide friendship and support while being physically active.<sup>7</sup>

### Individual Health Behavior

“Individually-adapted health change programs are tailored to the individual's readiness for change, specific interests, and preferences.”<sup>7</sup> These programs teach participants to incorporate physical activity into their daily routine, including how to

plan as well as use unplanned opportunities.<sup>7</sup> Individually adapted health-change programs all use the following five behavioral approaches:

- setting goals for physical activity and self-monitoring of progress,
- building social support for new behavior patterns,
- behavioral reinforcement using self-reward and positive self-talk strategies,
- structured problem-solving geared to maintenance of the behavior change, and
- prevention of relapse into sedentary behaviors.<sup>7</sup>



These interventions can be delivered to people in group settings or by mail, telephone, or direct media.<sup>7</sup>

## Environmental & Policy Approaches

### Affecting populations for change

Environmental and policy approaches are designed to help people adopt healthier behaviors, like physical activity, through the creation of healthful physical and organizational environments. These approaches often involve public policy changes, creation of supportive environments, and strengthening of community action.<sup>4</sup> “Interventions in this category are not aimed at individuals but rather affect entire populations by targeting physical and organizational structures,”<sup>4</sup> such as proximity of



places for physical activity within neighborhoods, safe lighting, air pollution, etc.<sup>4</sup>

Based on an extensive review of research in this area,<sup>7</sup> one environmental approach had the most evidence for success – creation of enhanced access to places for physical activity combined with informational outreach activities.<sup>7</sup>

### Enhanced Access

Interventions for enhanced access attempt to change the local environment to create opportunities for physical activity. Access to places for physical activity can be created or enhanced by:

- building trails or facilities, and/or
- reducing barriers (e.g., reducing fees, changing operating hours of facilities, opening facilities at worksites or community centers, etc.).<sup>4,7</sup>

In addition to providing access to places and facilities for physical activity, many of these interventions involve training on equipment, health education and techniques seminars, counseling, risk screening, health forums and

workshops, referrals to physicians or additional services, health and fitness programs, and support or buddy systems.<sup>7</sup>

As we look to the future concerning environmental approaches, it is important to note that “political action is imperative to effect physical and social environmental changes to enable and encourage physical activity.”<sup>9</sup> Settings in which these environmental changes can be implemented may include:

- urban and transportation infrastructure,
- schools, and
- workplaces.

### Your Role in Interventions Small changes – significant changes

As we translate efforts into actions for physical activity interventions, we need to attract individuals from all walks of life. We need to know what interventions are “most useful for dissemination and diffusion and how to adapt interventions to diverse cultures” as well as to different ages and across life stages.

We need to consider the economic benefits and cost-effectiveness of interventions as well. As we seek to increase physical activity through interventions, remember that physical activity has a direct and critical role to play in the primary

prevention of diabetes, obesity, cancer, and cardiovascular health.<sup>6</sup> There is much for all of us to do in seeking out and/or developing physical activity interventions to increase physical activity ourselves and in our communities.

Interventions, if widely implemented, could create significant public health benefits.<sup>4</sup> Small changes occurring among populations can amount to significant changes in terms of public health. The largest public health benefit of physical activity interventions is a result of increased activity among sedentary (inactive) populations, rather than increased activity among already active people.<sup>4</sup> So, if you are already active, consider helping implement some of the listed interventions, getting involved in community action, or grabbing a buddy or two and helping them get active with you, – the results could be a healthier America.



This document is meant for educational purposes only and is not intended to replace the advice of your doctor or other health care provider.

To view the references used in this newsletter, go to:  
<http://fcs.tamu.edu/health/healthhints/2007jul/ref.php>

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