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# THE HEALTH BENEFITS *of* PARKS



THE TRUST *for* PUBLIC LAND  
CONSERVING LAND FOR PEOPLE

# The Health Benefits of Parks

How Parks Help Keep Americans and Their Communities Fit and Healthy

By Erica Gies

Published by

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*The Trust for Public Land  
conserves land for people to enjoy  
as parks, gardens, and other natural  
places, ensuring livable communities  
for generations to come.*

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## Foreword

Several years ago The Trust for Public Land launched its Parks for People initiative to put a park within easy reach of every family—particularly in cities and metropolitan areas, where 85 percent of Americans live.

That work involves helping communities plan for parks and open space conservation, often through the use of an award-winning Geographic Information System (GIS) technology that TPL calls “greenprinting.” TPL also helps communities raise funds for parks and open space conservation and complete the sometimes complicated real estate transactions needed to put parks on the ground. In some cities TPL is helping to turn abandoned or underused parks and playgrounds into valuable community resources.

Another key element of the Parks for People initiative is making the case for parks and their importance to people, communities, and the environment. This white paper on the health benefits of parks is the second in a planned series that began with the 2003 publication of an overview report, *The Benefits of Parks: Why America Needs More Parks and Open Space*. Future topics in the series include the economic and environmental benefits of parks.

Why start with the health benefits of parks? For one reason, health is a top concern of people and communities. Also, the topic is timely. Lately the press has paid much attention to the nation’s crisis of physical inactivity and resulting health problems—including obesity, diabetes, and heart disease—especially among young people.

The opportunity for exercise in close-to-home parks, greenways, and other open space must be part of any comprehensive solution to this health crisis. And, as readers of the white paper will discover, supporting physical exercise is only one of many ways parks and open spaces help build the health of communities and their residents.

TPL hopes this paper will contribute to the ongoing discussion of how the structure of communities contributes to health, and offers it as a resource for government and volunteer leaders in making the case that parks and open space are essential to the health and well-being of all Americans.

For more information, visit the Parks for People section of TPL's Web site ([www.tpl.org/pforp](http://www.tpl.org/pforp)) and sign up for TPL's Landlink/ Parks for People newsletter by clicking the Free E-Newsletter button from any TPL Web page.

TPL is pleased to bring you this report. Thanks for joining our effort to bring parks to America's people.

A handwritten signature in black ink that reads "Will Rogers". The signature is written in a cursive style with a long horizontal line extending to the right from the end of the name.

Will Rogers  
President, The Trust for Public Land

## Executive Summary

Parks, playgrounds, greenways, trails, and community open spaces help keep Americans and their communities fit and healthy.

All people need physical activity to maintain fitness and health. Physical activity increases strength, flexibility, and endurance; relieves symptoms of depression and anxiety; improves mood; and enhances psychological well-being.

According to the Centers for Disease Control and Prevention (CDC), only 25 percent of American adults engage in recommended levels of physical activity, and 29 percent engage in no leisure-time physical activity at all. This sedentary lifestyle is contributing to an increased incidence of obesity along with obesity-related diseases, such as high blood pressure, diabetes, congestive heart failure, and stroke.

As one solution to the increased incidence of obesity, the CDC has called for more parks and playgrounds. Studies have shown that when people have access to parks, they exercise more.

Despite the importance of parks and other recreational open spaces to health, many Americans do not have adequate access to parks and open space. This is particularly true in American cities, where parkland is often inequitably distributed, putting certain populations at risk for health problems associated with inactivity. In Los Angeles, for example, more than 2.6 million people live too far (more than one-fourth mile) from the nearest park to walk there. Angelenos who live in low-income areas and in Latino, African American, and Asian American/Pacific Islander neighborhoods are less likely to be near parks, playgrounds, and exercise facilities than people who live in wealthier neighborhoods and in largely white neighborhoods.

Low-density, automobile-dependent patterns of development can discourage health-promoting incidental physical activity, such as walking or cycling to school or work or to run errands. Conversely, incorporating parks and greenways into communities can support increased exercise and healthier lifestyles. Parks, greenways, and trails make transportation corridors to shops, schools, and offices more attractive and pedestrian friendly. Greenways support dedicated exercise programs; incidental exercise; and healthy, human-powered transportation. To the extent that greenways decrease the number of cars on the road, they reduce air pollution, greenhouse gas emissions, and the accidents and stress that are by-products of driving.

Exposure to nature in parks, gardens, and natural areas can improve psychological and social health. Surgical patients recover faster with windows that look out on trees. Horticultural therapy has evolved as a form of mental health treatment based on the therapeutic effects of gardening. Children who suffer from attention deficit disorder (ADD) can concentrate on schoolwork better after taking part in activities in green settings. Residents in housing projects with views of trees or grass experience reduced mental fatigue and report that they are better able to cope with life's problems.

Parks provide children with opportunities for play, and play is critical in the development of muscle strength and coordination, language, and cognitive abilities.

Parks also build healthy communities by creating stable neighborhoods and strengthening community development. Research shows that residents of neighborhoods with greenery in common spaces enjoy stronger social ties. Neighborhoods with community gardens are more stable, losing fewer residents over time.

Parks increase "social capital." That is, when people work together in a community garden or to create a park from a vacant lot, they get to know one another, trust one another, and look out for one another. The accomplishment of creating a new park helps people to believe that they can effect change.

## **Parks Support Physical Activity for Health**

### **Physical Activity Improves Health**

A landmark report by the U.S. surgeon general found that people who engage in regular physical activity benefit from reduced risk of premature death; reduced risk of coronary heart disease, hypertension, colon cancer, and non-insulin-dependent diabetes; improved maintenance of muscle strength, joint structure, and joint function; reduced body weight and favorable redistribution of body fat; improved physical functioning if they suffer from poor health; and healthier cardiovascular, respiratory, and endocrine systems.<sup>1</sup>

“Americans can substantially improve their health and quality of life by including moderate amounts of physical activity in their daily lives,” the report found. It also found that “health benefits appear to be proportional to the amount of activity; thus, every increase in activity adds some benefit.”<sup>2</sup>

Physical activity also produces important psychological benefits, the surgeon general found. It relieves symptoms of depression and anxiety, improves mood, and enhances psychological well-being.<sup>3</sup>

### **Lack of Physical Activity Leads to Obesity and Poor Health**

Despite these now well-known benefits of physical activity, however, only 25 percent of American adults engage in the recommended levels of physical activity, and 29 percent engage in no leisure-time physical activity, according to the Centers for Disease Control and Prevention (CDC). The numbers for children and adolescents are similar: only 27 percent of students in grades 9 through 12 engage in moderate to intensive physical activity.<sup>4</sup>

Such a sedentary national lifestyle has contributed to an epidemic of obesity. Among U.S. adults aged 20 and older, 66.3 percent were obese or overweight in 2003–4, according to the CDC. This is a sharp increase over the 56 percent falling into these categories a mere decade before, during the study period 1988–94.<sup>5</sup> Even more alarmingly, the percentage of children and adolescents who are overweight has quadrupled and trebled since the early 1970s; 18.8 percent of children aged 6–11 and 17.4 percent of adolescents aged 12–19 are now seriously overweight.<sup>6</sup>

People who are obese suffer increased risk of high blood pressure, high blood cholesterol, congestive heart failure, stroke, gallstones, osteoarthritis, some types of cancer (such as endometrial, breast, and prostate), complications of pregnancy, poor female reproductive health (such as menstrual irregularities, infertility, and irregular ovulation), and bladder

control problems. They also suffer great risk of psychological disorders such as depression, eating disorders, distorted body image, and low self-esteem.<sup>7</sup>

## **Costs of Obesity**

Many expenses result from caring for people with these conditions. They include preventative, diagnostic, and treatment health care; pharmaceuticals; rehabilitation; ambulance transportation; hospital and home care charges; and lost wages due to illness, disability, and early death. Expenses resulting from conditions related to obesity and overweight totaled \$117 billion in 2000.<sup>8</sup>

Another study found that approximately 300,000 premature deaths per year in the United States were attributable to obesity and overweight.<sup>9</sup>

By the end of the decade, the number of people who die prematurely from obesity will be greater than the number who die from smoking, according to the *American Journal of Health Promotion* as reported in *HealthDay News*.<sup>10</sup>

## **Obesity May Affect Life Expectancy**

Researchers publishing in the *New England Journal of Medicine* in 2005 asserted that average life expectancy in the United States will soon begin to decline as a result of the large number of people who are obese and overweight, reversing gains made in human life expectancy over the past 1,000 years and particularly in the last 150 years.

The researchers found that obesity currently reduces U.S. life expectancy by one-third to three-fourths of a year. But they predict that in the coming decades life expectancy could be curtailed by two to five years.<sup>11</sup>

Critics of the study contend that it is based on limited data and flawed methodology, is “excessively gloomy,” and even suffers from a conflict of interest.<sup>12</sup> The researchers themselves admit that life expectancy gains could be preserved with advances in public health policy or medical treatment.

## **Access to Parks Increases Frequency of Exercise**

Fortunately, strong evidence shows that when people have access to parks, they are more likely to exercise, which can reduce obesity and its associated problems and costs.

A group of studies reviewed in the *American Journal of Preventive Medicine* showed that “creation of or enhanced access to places for physical activity combined with informational outreach” produced a 48.4 percent increase in the frequency of physical

activity.<sup>13</sup> The same studies showed that easy access to a place to exercise results in a 5.1 percent median increase in aerobic capacity, along with weight loss, a reduction in body fat, improvements in flexibility, and an increase in perceived energy.<sup>14</sup>

A national study by the RAND Corporation looked at the correlation between physical activity in adolescent girls and proximity to parks and schools. Researchers found that girls who live close to parks participate in more physical activity than those who live farther away.<sup>15</sup> Another RAND Corporation study found that Los Angeles residents who live near parks visit them and exercise more often than people who live greater distances from green spaces.<sup>16</sup>

### **Lack of Park Space Hinders Health**

Unfortunately, residents of many American communities do not have easy access to a park or recreation facility. This is especially true in cities and urban areas, where 80 percent of Americans lived in 2000.<sup>17</sup>

For example, parkland covers a mere 3.8 percent of Atlanta's total area, and no public green space in the city is larger than one-third of a square mile.<sup>18</sup>

In New York City, nearly half the districts have less than 1.5 acres of parkland per 1,000 residents.<sup>19</sup>

Study after study shows that when people can't reach parks, they often go without exercise. This is especially true of low-income people who can't afford gym memberships. And exercise is a key determinant in avoiding obesity and maintaining health.

### **Park Access Inequitably Distributed**

There is a notable paucity of parks in poor communities. More generally, there is a correlation among poverty, minority status, obesity, ill health, and neighborhood factors that discourage exercise, including the absence of parks and recreation facilities.

For one study, researchers observed 405 communities and made a statistical estimate of the likelihood that communities with differing poverty rates would include a bike path. They concluded that in communities with a 1 percent poverty rate there was a 57 percent chance of a bike path being present. In communities with a 10 percent poverty rate, there was only a 9 percent chance that a bike path would be present.<sup>20</sup>

For a paper published in *Pediatrics*, researchers studied nearly 20,000 adolescents nationwide, relating access to facilities for physical activity (mapped in distance from their homes) with frequency of exercise and obesity levels. Teens living in high-minority,

lower-educated areas were half as likely as those in low-minority, higher-educated zones to have access to a facility in which to exercise. The odds of being overweight declined as the number of exercise facilities increased. Teens who lived in areas with seven facilities were 32 percent less likely to be overweight and 26 percent more likely to be highly active than those who lived in areas with no facilities.<sup>21</sup>

A 2005 University of Southern California study of park access in Los Angeles found that people who live in areas of low income or concentrated poverty and in Latino, African American, and Asian American/Pacific Islander neighborhoods are less likely than people living in largely white neighborhoods to have nearby access to parks, playgrounds, and other exercise facilities.<sup>22 23</sup> In all, more than 2.6 million Angelenos live more than a quarter mile from the nearest park.

Lack of park access is likely a contributing factor to a lack of fitness among Los Angeles schoolchildren. In the 2003–4 school year, nearly one-third of the schools in the Los Angeles Unified School District had fewer than 10 percent of students meeting basic fitness levels. In 40 of the district's 605 schools, not a single student was rated as physically fit.<sup>24</sup>

The proximity of a park to where people live is not the only factor that influences whether they will exercise there. Features such as adequate lighting, availability of toilets and drinking water, and park design and maintenance all affect how much the park will be used.<sup>25</sup>

## **Community Gardens for Health**

Inner-city neighborhoods often are at a disadvantage when it comes to finding healthful, nutritious food. Along with lack of exercise, poor diet can be a contributing factor to obesity and related health problems among people who live in these neighborhoods.

Community gardens provide both stress-reducing exercise and healthy, inexpensive or free produce. In 1999, 15 community gardens in New York City grew 11,000 pounds of fresh produce, of which they donated 50 percent to local soup kitchens and food pantries. The same year a single garden in the South Bronx grew 200 pounds of tomatoes and 75 pounds of peppers.<sup>26</sup> At many gardens throughout the city, gardeners give away their produce to neighbors and passersby.<sup>27</sup>

Gardening builds strength, endurance, and flexibility. For example, raking or carrying leaves builds endurance and strength, while pruning cultivates flexibility. Studies show that gardeners eat vegetables more frequently than nongardeners. And gardening helps people relax, unwind, and connect with others. It also reduces blood pressure and relieves muscle tension. Moreover, gardening is a form of physical activity that people can do at any age.

# Parks and Greenways Increase Health in Newer Communities

## Development Patterns Discourage Physical Activity

The development pattern known as sprawl arose after World War II. Typified by freeways, strip malls, and cul-de-sac housing developments, it so heavily favors car use that most people are unable to walk or bicycle for transportation. San Diego State University researchers wrote in 2004: “Current reliance on personal vehicle use, along with other factors contributing to more sedentary lifestyles (e.g., application of technology to work and entertainment), has engineered physical activity for nonexercise purposes out of many Americans lives.”<sup>28</sup>

A 2004 RAND study on sprawl found that “living in a high-sprawl area has the equivalent effect on your health as aging four years.”<sup>29</sup>

In a landmark 2003 study, researchers related sprawl in U.S. counties with the body mass index (BMI) of people living in those counties. They found that people in sprawling counties walk less, weigh more, and have more hypertension than people who live in more compact counties, where they could more easily walk in the course of daily life. Comparing the most compact county, New York, with the most sprawled, Geauga County, Ohio, researchers found that New York residents walked 79 minutes more per month and weighed 6.3 pounds less.<sup>30</sup>

A 2004 study of nearly 11,000 people in Atlanta, Georgia, found that each hour spent in daily driving corresponded with a 6 percent increase in the odds of being obese, while each kilometer walked had a correlating 4.8 percent reduction in obesity risk.<sup>31</sup> The researchers also divided Atlanta’s communities into four categories, ranging from residential (sprawled) to mixed-use (compact), and found that the relative risk of being obese was 35 percent higher in the sprawled areas.<sup>32</sup>

## Biking and Walking for Health

One key way to incorporate exercise into daily activity is to walk or bike for errands near home. A 1997 study found that 83 percent of all trips are taken for short, nonwork purposes.<sup>33</sup> National data find that 14 percent of these trips are within one-half mile and 27 percent are within one mile of home—both considered walkable distances—and 63 percent were within five miles, considered reachable by bicycle.<sup>34</sup>

Even short walks can make a difference. The CDC estimates that a difference of 100 calories of exercise per person per day—a 20-minute walk—could eliminate the nation’s obesity epidemic.<sup>35</sup>

Health professionals promote the benefits of incidental exercise, such as gardening, climbing stairs, or biking to do errands, and they note that, whereas people might not maintain enthusiasm for a dedicated exercise program, incidental physical activity requires less motivation.<sup>36</sup>

Some urban planners are working to promote what they call *active living* communities, with compact layout, sidewalks, and greenways, where people can seamlessly integrate 30 minutes of physical activity into their daily routine.<sup>37</sup>

Active living finds common ground with *smart growth* and *new urbanism*, which attempt to address sprawl’s effect on health and the environment.<sup>38</sup> Other movements with complementary goals include *healthy communities*, *sustainable development*, and *livable communities*.<sup>39</sup>

## Greenways for Healthy Living

Leaders of all these movements highlight greenways as a way to fulfill the goals of healthy living. These sinuous, skinny parks and trails, ranging in length from a few blocks long to many miles, link larger parks, schools, offices, and stores. Often developed from abandoned railroad corridors or along waterfronts, they are a popular way for communities to promote healthy lifestyles. They support dedicated exercise programs; incidental exercise such as running errands; and healthy, human-powered transportation such as walking and biking to school or work.

Greenways in a community have been shown in several studies to increase regular physical activity, particularly among people who live nearby. In a survey of trail users in southeastern Missouri, 55 percent of respondents said they were exercising more since the trail was built.<sup>40</sup> And users of six trails in Indiana reported that they were getting more exercise because of their trails.<sup>41</sup>

Trails also figure prominently in the Safe Route to School programs created by many communities over the last several years. These programs provide children with walking and biking zones completely separate from auto traffic and teach them good attitudes toward exercise while they are young and impressionable.<sup>42</sup>

And greenways share an important trait with private health clubs—a much more expensive way to get exercise. As in a health club, people on a community trail can see and interact with others who are also exercising, adding a key ingredient of social support that encourages participation in physical activity.<sup>43</sup>

Dr. Ross Brownson of Saint Louis University led a study about how environmental and policy issues affect physical activity. He concluded, “[T]his study suggests that changing communities by making them safer and offering people access to community parks, public recreation facilities, and walking and biking trails may help reduce the prevalence of overweight by promoting physical activity and healthy lifestyles.”<sup>44</sup>

## **Reducing Air Pollution and Global Warming**

To the extent that greenways can reduce automobile miles traveled, they help mitigate health problems associated with fossil-fuel consumption.

One of these is respiratory disease resulting from increased air pollution. At the Third Ministerial Conference on Environment and Health, held in London in 1999, researchers presented results from a study on the health effects of air pollutants from traffic in Austria, France, and Switzerland and their related costs, and later republished the findings in a WHO report. They found that vehicle-related pollution caused more deaths than traffic accidents.<sup>45</sup>

Driving is also a major factor in global warming, causing 26 percent of greenhouse gas emissions in the United States. Greenhouse gases from vehicles increased 18 percent during the 1990s, mostly because people traveled more miles. Global warming is expected to threaten human health with more frequent and more intense heat waves and increased prevalence of infectious diseases.<sup>46 47 48 49</sup>

Parks and greenways can mitigate air pollution and increased temperatures. Mature tree canopies can reduce air temperature five to ten degrees, helping to counteract the urban heat island effect, according to the University of Washington’s Center for Urban Horticulture.<sup>50</sup> And trees filter pollutants out of the air. According to American Forests, trees in Atlanta remove 19 million pounds of pollutants annually, a service worth \$47 million.<sup>51</sup>

## **Reducing Accidents and Mental Stress**

Reducing miles driven by providing greenway transportation routes also helps reduce the frequency of highway accidents. By creating pedestrian routes separated from traffic, greenways also help reduce vehicle–pedestrian accidents, which now result in 6,000 deaths and 110,000 injuries each year in the United States.<sup>52 53</sup> Accidents involving vehicles and pedestrians are less common in countries such as the Netherlands and Germany, which have separate pedestrian and cycling lanes.<sup>54</sup>

Long hours of driving also take a toll on mental health. One indicator that commuting is

affecting people's peace of mind is the increase in road rage, when an angry driver tries to injure or kill another driver over a traffic dispute.<sup>55</sup> From 1990 to 1996, 10,000 incidents of road rage were documented, including 12,610 injuries and 218 deaths. Weapons included guns, knives, clubs, fists, feet, and vehicles. The documented period showed a 51 percent increase in incidents, according to the AAA Foundation for Traffic Safety.<sup>56</sup>

# Benefits of Parks and Greenways to Psychological and Social Health

## Exposure to Nature and Greenery Makes People Healthier

A growing body of research shows that mere contact with the natural world improves physical and psychological health.

One important study reviewed the recovery of surgical patients in a Pennsylvania hospital. The rooms of some patients offered views of a stand of trees, while others faced a brown brick wall. A review of ten years of medical records showed that patients with tree views had shorter hospitalizations, less need for pain killers, and fewer negative comments in the nurses' notes, compared with patients with brick-wall views.<sup>57</sup>

The benefits extend to psychological health. "The concept that plants have a role in mental health is well established," according to a review of previous studies by Howard Frumkin in the *American Journal of Preventive Medicine*. "Horticultural therapy evolved as a form of mental health treatment, based on the therapeutic effects of gardening. It is also used today in community-based programs, geriatrics programs, prisons, developmental disabilities programs, and special education."<sup>58 59</sup>

Further, "research on recreational activities has shown that savanna-like settings are associated with self-reported feelings of 'peacefulness,' 'tranquility,' or 'relaxation,'" Frumkin writes. "Viewing such settings leads to decreased fear and anger ... [and] is associated with enhanced mental alertness, attention, and cognitive performance, as measured by tasks such as proofreading and by formal psychological testing."<sup>60</sup>

## Parks Provide Therapy for Attention Deficit Disorder

About 2 million U.S. children suffer from attention deficit disorder (ADD), a condition that negatively impacts academic performance, peer relationships, and family harmony. In addition, children with ADD are at greater risk than their peers for low self-esteem, anxiety, and depression. Current treatments of medication and behavioral therapy have serious side effects or limited efficacy.

Researchers have recently discovered that children with ADD can concentrate on schoolwork and similar tasks better than usual after taking part in activities in green settings, such as walking through or playing in a park. And the greener a child's play area, the less severe the symptoms.<sup>61</sup>

## Exposure to Nature Promotes Coping and Health

A 2001 study examined how exposure to nature affected residents of Chicago housing projects and their ability to address major life challenges. These include crowding, noise, danger, and poverty; the demands of single parenting or other caretaker responsibilities; unemployment; paying the bills; getting enough food each month; running out of medicine; dealing with violence, including fear of bullets coming through the windows or children getting shot while playing; and parenting problems in this environment, such as keeping a son out of a gang or a daughter from getting pregnant. These stressors lead to chronic mental fatigue and can become overwhelming.<sup>62</sup>

Researchers found that residents with even limited views of trees or grass from their apartments reported less mental fatigue, less procrastination in dealing with life issues, and feeling that their problems were less severe, more solvable, and of shorter duration than residents with no views of nature. Even small amounts of nature, such as a few trees and a bit of grass, were shown to have an impact.<sup>63</sup>

## Why Exposure to Green Space May Benefit Health

Important theoretical foundations in the area of nature and health were laid by Harvard biologist Edward O. Wilson, who in 1984 hypothesized the existence of biophilia, “the innately emotional affiliation of human beings to other living organisms.”<sup>64</sup>

Howard Frumkin has extended this idea to postulate “an affinity for nature that goes beyond living things, to include streams, ocean waves, and wind.”<sup>65</sup> This affinity may stem from evolutionary roots: “For the great majority of human existence, human biology has been embedded in the natural environment,” Frumkin writes. “Those who could smell the water, find the plants, follow the animals, and recognize the safe havens, must have enjoyed survival advantages.”<sup>66</sup>

These theories make the findings of the studies mentioned in this section easier to understand, especially when considered along with a related theory called habitat selection. This suggests that organisms gravitate toward environments in which they are likely to flourish,<sup>67</sup> and many researchers have documented a human preference for natural elements.<sup>68</sup> Conversely, animals stuck in unsuitable habitats suffer social and psychological breakdown.<sup>69</sup> Researcher Frances Kuo suggests that humans prefer nature in their landscapes because it is a key ingredient of human habitat, is essential to our psychological and social health, and has an apparent beneficial effect on blood pressure, heart rate, mood, day-to-day effectiveness, social behavior, cognitive functioning, and work performance.<sup>70</sup>

Some experts advise that children today are not getting enough access to nature owing to fear of crime in distressed areas, parental paranoia about “stranger danger” in more affluent areas, media hype of infrequent child violence cases, and overexposure to technologies like computers and video games. Author Richard Louv calls this problem “nature-deficit disorder,” and says that children miss out on all kinds of growth opportunities when they are not allowed to explore the relative edges of civilization.<sup>71</sup>

## **Parks Support Play and Brain Development**

For small children, playing is learning. Play has proven to be a critical element in a child’s future success. Play helps kids develop muscle strength and coordination, language, cognitive thinking, and reasoning abilities.

“Research on the brain demonstrates that play is a scaffold for development, a vehicle for increasing neural structures, and a means by which all children practice skills they will need in later life,” according to the Association for Childhood Education International.<sup>72</sup> Play also teaches children how to interact and cooperate with others, laying foundations for success in school and the working world.

Exercise has been shown to increase the brain’s capacity for learning. In 1999 researchers at the Howard Hughes Medical Institute found that running boosts the growth of new nerve cells and improves learning and memory in adult mice. The new nerve cells were concentrated in a part of the brain called the hippocampus, which plays a central role in memory formation, including spatial learning—locating objects in the environment—and the ability to consciously recall facts, episodes, and unique events.<sup>73</sup>

## **Parks Promote the Social Health of Communities**

Among the most important benefits of city parks—though perhaps the hardest to quantify—is their role in the social health of communities. City parks make inner-city neighborhoods more livable. They offer opportunities for recreation and exercise to at-risk and low-income children, youth, and families who might not be able to afford them elsewhere. They also provide places in low-income neighborhoods where people can experience a sense of community.

Research shows that residents of neighborhoods with greenery in common spaces are more likely to enjoy stronger social ties than those who live surrounded by barren concrete.

A study by the University of Illinois and the University of Chicago found that for urban public housing residents, levels of vegetation in common spaces predicted the formation of neighborhood social ties. “In inner-city neighborhoods where common spaces are

often barren no-man's lands, the presence of trees and grass supports common space use and informal social contact among neighbors," the study found. "In addition, vegetation and [neighborhood social ties] were significantly related to residents' senses of safety and adjustment."<sup>74</sup>

These benefits often arise in the context of community gardens. A 2003 study conducted by the University of Missouri–Saint Louis for the community development organization Gateway Greening found that Saint Louis neighborhoods with community gardens were more stable than other neighborhoods. In a city that lost nearly 50,000 residents between 1990 and 2000, neighborhoods with gardens did relatively better, losing 6 percent of their population over the decade compared with 13 percent for the city as a whole.<sup>75</sup>

Advocates of community gardens say they increase residents' sense of community ownership and stewardship, provide a focus for neighborhood activities, expose inner-city youth to nature, connect people from diverse cultures, reduce crime by cleaning up vacant lots, and build community leaders.

"The garden can take credit for bringing the neighborhood together," says Annie Thompson in Park Slope, Brooklyn, speaking about the Garden of Union, a community garden.<sup>76</sup>

More research is needed on this subject, as the evidence of these social benefits is often anecdotal. It is also difficult to isolate the benefits of a community garden from the effects of economic, demographic, and other changes on a neighborhood.

## **Getting the Community Involved**

Research supports the widely held belief that community involvement in neighborhood parks is correlated with an increase in "social capital." That is, when people work together toward shared goals, such as working in a community garden or creating a park from a vacant lot, they get to know one another, trust one another, look out for one another, and feel invested in their neighborhood. These benefits may be abstract, but they lead to concrete community improvements such as fewer homicides and other violent crime; fewer property crimes, including graffiti; reduced juvenile delinquency; higher educational achievement; lower rates of asthma and teen pregnancy; and better response to the community's needs by central governments because they see a united front.<sup>77</sup>

A similar idea to social capital is "collective efficacy"—when neighbors feel part of a community, trust one another, and are willing to intervene for the common good when trouble arises.

The Project on Human Development in Chicago Neighborhoods conducted a \$50 million study on the causes of crime, substance abuse, and violence, finding that “in neighborhoods where collective efficacy was strong, rates of violence were low, regardless of sociodemographic composition and the amount of disorder observed. Collective efficacy also appears to deter disorder: Where it was strong, observed levels of physical and social disorder were low.”<sup>78</sup>

Activities such as working together to create parks foster in individuals the belief that they can effect other changes in their lives. A community park comes to symbolize not only the accomplishment of creating a haven where there was once a vacant lot, but perhaps more important, the general ability to create change. They have had a success, a small bit of power—for some, maybe, the first in their lives.

When planning new parks in multicultural neighborhoods, it’s important to consult the community to see what type of park people would be most likely to use. People of different ages have different health needs, and people from different backgrounds and ethnic groups have differing physical activity preferences and attitudes toward nature.<sup>79</sup>  
<sup>80</sup> Involving people in the planning stages also gives them a sense of ownership in their park.

Neighbors continue to remain an important resource once a park is established. John Kretzmann, co-director of the Asset-Based Community Development Institute at Northwestern University, says that park managers should think of local residents as people with assets who can contribute their gifts and skills, turning parks into resource exchanges and learning networks.

Kretzmann surveyed a four-block area in a poor district of Chicago. Residents were asked if they had any creative skills. Interviewers discovered that more than 50 percent of households contained people with talents as artists, storytellers, painters, comic-book writers, and practitioners of theater and crafts. “When asked: How many of you would be willing to contribute your arts and culture to the park?—about 80 percent of the folks said, Of course we would—we’ve never been asked.” Rather than as a client or a consumer, a resident should be thought of as “somebody who comes out of the door every morning cognizant of her or his resources, ready to join with other resourceful neighbors to do problem-solving and to do community-building.”<sup>81</sup>

By providing a venue for community building, parks contribute to social health as surely as they do to the physical and psychological health of people.

## Endnotes

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