



ACTIVE LIVING BY DESIGN

Increasing physical activity through community design



A Primer on Active Living by Design

Active Living by Design and Public Health

Active living is a way of life that integrates physical activity into daily routines. The goal is to accumulate at least 30 minutes of activity each day. Individuals may achieve this by walking or bicycling for transportation, exercise or pleasure; playing in the park; working in the yard; taking the stairs; and using recreation facilities.

Active Living by Design promotes environments that offer choices for integrating physical activity into daily life. This primer presents an overview of the relationships between our environments and physical activity.

The text that follows includes a summary of physical inactivity and related diseases, the importance of an active lifestyle to achieving good health, and suggestions for increasing active living within communities.

The following aspects of the active living environment are addressed:

- Land use
- Transportation
- Parks, trails, and greenways

Physical Inactivity Adversely Affects Health

Physical inactivity plays a significant role in the most common chronic diseases in the U.S., including coronary heart disease, stroke, and diabetes; each of these is a leading cause of death.¹ More specifically:

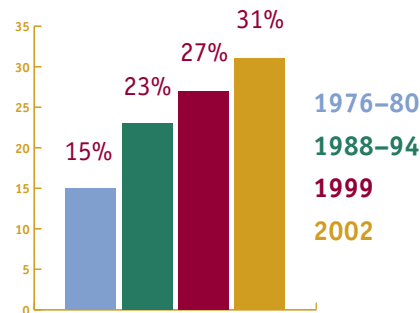
- Physical inactivity and poor diet are responsible for an estimated 400,000 deaths annually from coronary heart disease, colon cancer, stroke, and diabetes.²
- 34% of coronary heart disease deaths can be attributed to physical inactivity;³ physically inactive adults are nearly twice as likely than those who are active to have coronary heart disease.³
- Physical inactivity can increase the risk of stroke and high blood pressure.⁴
- Diabetes, a chronic condition, increasingly affects individuals and their families. In 2001, about one in ten adults reported having diabetes. Type 2 diabetes is influenced by physical inactivity.⁵

- Pediatricians and health scientists are increasingly concerned about Type 2 diabetes in children, due largely to physical inactivity.⁶
- Physical inactivity strongly influences obesity and overweight, which contribute to or increase chronic diseases and death. In 2002, the National Health and Nutrition Examination Survey (NHANES) found that 65.7% of adults measure as

being overweight or obese, and 30.6% of adults register as obese, or approximately 30 pounds overweight.^{7*}

- The proportion of youth who are overweight and adults who are obese has more than doubled in the last 20 years.⁵ Among children aged 6 through 19 years in 2002, 31.5% were overweight or at risk of overweight and 16.5% were overweight.⁸ This increase has led scientists to declare an "obesity epidemic."⁵
- People who meet or exceed the recommended levels of physical activity report higher levels of perceived quality of life and health status. In 2001, individuals across all age groups meeting recommended levels of physical activity were significantly less likely to report "unhealthy days" compared to physically inactive adults.⁹

Obesity Rates in U.S. Adults, 1976–2002



Source: NHANES

*Obesity = Body Mass Index (BMI) of 30 kg/m² or greater; Overweight = BMI of 25–29.9 kg/m²

The Economics of Physical Inactivity and Obesity

The estimated annual cost of obesity and overweight in the United States is approximately \$117 billion.⁵ The potential savings, if all inactive American adults became physically active, could be \$76.6 billion per year.¹⁰

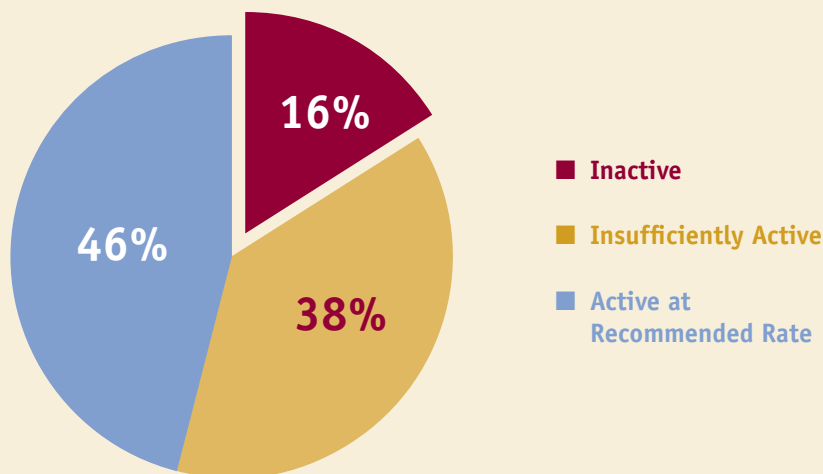


Physical Activity Patterns and Trends

Americans are likely to be either inactive or participate in physical activities on an irregular basis.

- In 2003, fewer than half of U.S. adults reported they received recommended levels of physical activity through either moderate or vigorous activities.¹¹ Thirty-eight percent of those adults participated in some activities too infrequently to achieve the Surgeon General's recommendation; an alarming 16% reported not getting even 10 minutes of moderate or vigorous physical activity each week.¹¹
- More than a third of young people in grades 9–12 do not regularly engage in vigorous physical activity. Daily participation in high school physical education classes dropped from 42% in 1991 to 29% in 1999.¹² Nationwide, 33.4% of high school students do not participate in sufficient vigorous or moderate physical activity.¹³

Recommended Physical Activity, U.S. Adults, 2003



Source: Behavioral Risk Factor Surveillance System

Creating Opportunities for Active Living

The 1990s did not show increases in active leisure time rates,¹⁴ suggesting that our past efforts have not improved rates of physical activity, in part because traditional strategies have focused on changing individual behavior. Improving health as a result of increased physical activity will require efforts to remove barriers and to create more opportunities for active living. Professionals representing various disciplines, including land use, transportation, parks, trails, and greenways, impact the presence or absence of built and natural environments and community supports for active living. Recent studies have linked increases in walking for transportation and recreation to neighborhood environmental attributes, such as aesthetics, proximity to important destinations, and weather.¹⁵



Physical Activity Recommendations

- Adults should accumulate 30 minutes or more of moderately intense physical activity on five or more days per week, or 20 minutes or more of vigorously intense physical activity on three or more days per week.
- Adolescents should engage in at least 20 minutes of sustained moderately to vigorously intense physical activity on all days of the week.
- Elementary school-aged children should accumulate at least 60 minutes of moderately to vigorously intense physical activity on all days of the week.

—Adapted from the physical activity recommendations provided by the Centers for Disease Control and Prevention 2003.

Land Use and Physical Activity

Land use influences the fundamental character of our communities and our lifestyles by determining:

- What land is developed and for what purpose.
- Where and how far apart our destinations are.
- What kinds of activities can happen in a given space.
- Who can live next to whom or what.
- What choices people have in getting from place to place.



Mixed Land Use and Opportunities for Physical Activity

Evidence is mounting that automobile-oriented land use policies reduce transportation choice, adversely affect air quality and safety, and discourage physical activity.¹⁶ A more compact and mixed land use pattern that offers short distances to interesting destinations combined with pedestrian-friendly design features would: encourage walking and biking; remove barriers to activity for everyone; and make healthy levels of physical activity attainable for more people during their daily routine.

- Mixed land use increases the number and percentage of walking and biking trips; for trips less than one mile, mixed-use communities generate up to four times as many walking trips/week as residents of low walkable neighborhoods.¹⁷
- Residents in a highly walkable neighborhood engage in about 70 more minutes per week of moderate and vigorous physical activity than residents in a low-walkability neighborhood.¹⁸
- Forty-three percent of people with safe places to walk within ten minutes of home meet recommended activity levels, compared to 27% of those without safe places to walk.¹⁹ People are more likely to walk or bicycle if they live in a city

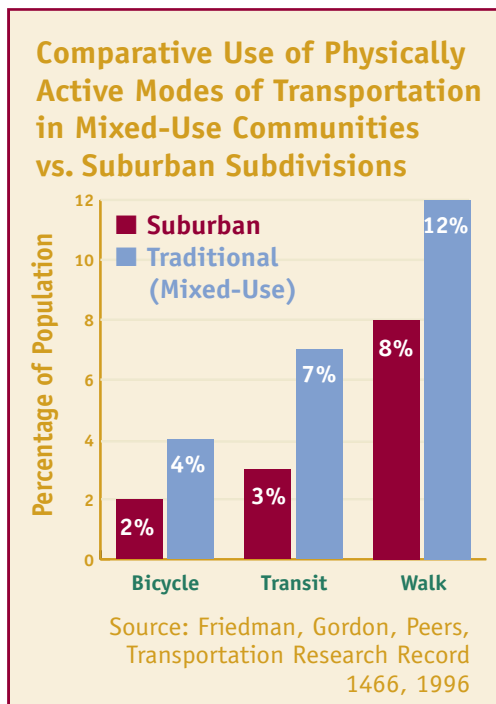
center, live close to a non-residential building, live close to a grocery store or drug store, and have good access to public transportation.²⁰

- An 11-year study that followed residents in Seattle as they moved found that people shifted some trips to transit, bicycling and walking as a result of moving into more walkable neighborhoods.²¹

- A national study of 448 metropolitan counties found that people living in sprawling, low-density counties walk less, weigh more and are more likely to be obese or have hypertension than people living in more compact counties.²²

Current land use trends increase automobile dependency and make walking, biking and transit less practical, less convenient, less safe and less pleasant.

- Between 1982 and 1997, urban land density in the U.S. dropped by more than 20%, requiring greater reliance on cars for travel.²³
- From 1960 through 1990, the percentage of workers with jobs outside their counties of residence tripled, while the proportion of workers commuting within their counties of residence declined. Vehicle miles traveled rose dramatically during this period, while walking declined.²⁴
- Acreage standards for schools typically range from 10–60 acres. Older schools typically occupy only 2–8 acres.²⁵ These and other standards require that new schools be built in outlying areas, away from established neighborhoods. Largely as a result, only one in eight children walks to school.²⁵ Less than 15% of students between the ages of five and 15 walk to or from school and 1% bike, compared to 48% in 1969.²⁶



T ransportation and Physical Activity

Transportation determines not only how people move from place to place, but also the fundamental character of communities and the choices and opportunities people are provided.



Transportation Policies Make a Difference

Trends toward a more spread out and segregated landscape reinforce a growing car dependency that reduces opportunities for regular physical activity during daily routines.

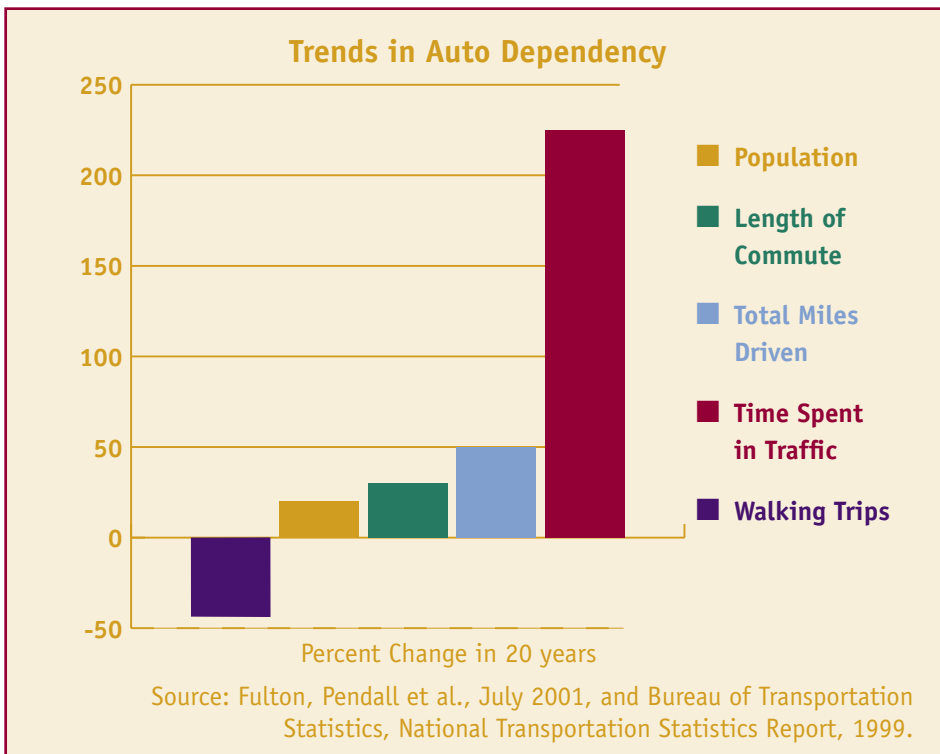
There is growing evidence that current transportation policies that promote automobile dependency adversely affect air quality and safety and discourage physical activity.¹⁷ A more balanced transportation system that offers more choices and encourages walking and biking would remove barriers to activity

for everyone and make healthy levels of physical activity attainable for large numbers of people during their daily routine.

The transportation system can encourage physical activity:

- Recent studies have found that people with access to sidewalks are more likely to walk²⁷ and meet the Surgeon General's recommendations for physical activity.²⁸

- People who report having access to walking/jogging trails are 55% more likely to be physically active.²⁹
- Walking trips increase with good connectivity of the street network, a greater number of intersections and blocks, and streets with low speeds that are narrow and visually interesting.³⁰



Current transportation trends indicate that walking, biking and transit are becoming less practical, less convenient, less safe and less pleasant. Consider this:

- Between 1977 and 1995, trips made by walking declined by 40% for both children and adults while driving trips increased to almost 90% of the total.³¹
- During the past 20 years, the time we collectively spent in traffic grew 12 times as fast as the population, while the number of trips taken on foot dropped by 42%.^{23, 24}
- One-fourth of all trips people make are one mile or less, but three-



fourths of these short trips are made by car.³²

- Although almost half of all trips were less than three miles in 1990—a convenient distance for a bicycle—less than one percent were actually made by bicycle.³³
- Children’s walking trips to school have declined by 40% between 1977 and 1995. Children between the ages of 5 and 15 make only

10–12% of their school trips by walking or riding their bicycles. Almost 70% of all children’s trips are by car.³³

- Between 1998 and 2001, the average annual amount spent on pedestrian/bike projects was 87 cents per person while the average annual amount spent for roads and bridges was more than 50 dollars per person.³⁴



The Active Transportation Campaign



Active Transportation is a means of travel that incorporates physical activity, such as walking or bicycling. Using active means of transportation can help people achieve the health benefits of the U.S. Surgeon General’s recommended levels of physical activity. This campaign assists individuals and organizations in incorporating physical activity into daily transportation routines. For more information, visit www.activetransportation.com.

Parks, Trails and Greenways and Physical Activity

Parks, trails and greenways* are important community places that provide opportunities for close-to-home recreation and connections to local destinations. The proximity of these places to where people live and work and the types of facilities and programs available influence levels of daily physical activity.



The Impact of Accessible Parks, Trails and Greenways

Researchers have found positive relationships between settings for physical activity and physical activity patterns in adults.³⁵ Other studies suggest that the presence of parks, trails and greenways can increase physical activity among adults.

- In a survey of U.S. adults, people with access to neighborhood parks were nearly twice as likely to be active as those without access.²⁸
- A survey of users on three greenways in Texas found that respondents indicate that the greenways have contributed the most to community quality of life through health and fitness, followed by access to natural areas and recreation, land use patterns, pride in the community, and community identity.³⁶

- A study of park usage of older adults in the Cleveland metropolitan area found that most park users older than 50 were physically active during their visit. More than two-thirds used the parks for moderate or high levels of physical activity. More specifically, about 16% enjoyed a high level of physical activity (e.g., jogging, bicycling, hiking), 51% had a moderate level (e.g., walking 21–45 minutes, biking, hiking or swimming less than 30 minutes), 17% had a low level (e.g., playing with grandchildren, walking 20 minutes or less).³⁷
- In a Missouri survey, 55.2% of people using trails reported an increase in walking since they began using the trails. Women and people with a high school

education or lower were more than twice as likely to have increased their amount of walking since they began using the trails. This study also found that walking trails may be beneficial in promoting physical activity among women and people in lower socioeconomic groups.³⁸

Parks, trails and greenways not only provide a low-cost and fun way for people of all ages to increase their physical activity levels but also can provide other health and environment benefits to communities. Evidence is growing that parks, trails, and greenways can have positive effects on cities by protecting open space, attracting investment, revitalizing cities, reducing personal stress, and protecting the environment.³⁹

* Greenways are corridors of protected public and private land along rivers, stream valleys, ridges, abandoned railroad corridors, utility rights-of-way, canals, scenic roads or other linear features.

Physical Activity and Daily Routine

Parks, trails and greenways can provide a low-cost way for people to get to work, school, a grocery store or other destinations of interest. These community places are an excellent way to integrate physical activity into people's daily routines and achieve the Surgeon General's recommendation of 30 minutes of moderately intense physical activity five or more days per week.



Calls to Action

Active Living by Design recommends the following strategies for comprehensive promotion of active living.

Preparation

Develop and foster multi-disciplinary partnerships that include representatives from public health, city planning, transportation, architecture and other fields. Assess existing policies and environmental conditions, develop a strategic plan, and identify additional resources.

Promotion

Communicate through a number of available outlets, such as traditional mass media channels, listservs and newsletters. Messages should highlight the importance of active living in a variety of built, natural and social environments.

Programs

Create programs that heighten the demand for physical activity in the community. Some programs may help raise awareness of active living issues, while other programs will mobilize the public to advocate for policy change.

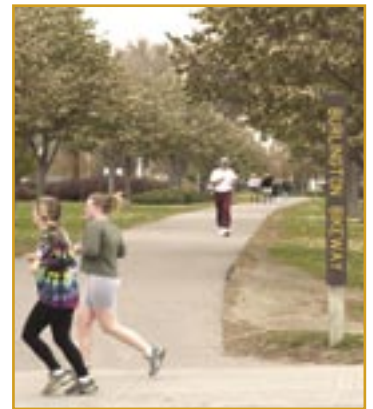
Policy Influence

Influence decisions that impact policies and programs to ensure that supportive infrastructures are institutionalized. Legislators and other policy makers play a key role in determining community design and transportation options.

Physical Projects

Promoting routine physical activity will require specific physical improvements, such as parks, trails, bikeways and sidewalks. Implementing and supporting facilities that promote physical activity will require the full integration of the four other strategies described here.

For a detailed listing of Calls to Action for each active living area, see the Active Living by Design Land Use, Transportation, and Parks, Trails and Greenway Fact Sheets. Fact Sheets available online at www.activelivingbydesign.org.



Active Living by Design is a national program of The Robert Wood Johnson Foundation and is administered by the University of North Carolina's School of Public Health in Chapel Hill. The program establishes and evaluates innovative approaches to increase physical activity through community design, public policies and communications strategies. For more information, please visit our website www.activelivingbydesign.org.

Resources

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Photographs used in the primer were taken from the Pedestrian and Bicycle Information Center (www.pedbikeimages.org). Photographer Dan Burden.