



ACTIVE LIVING BY DESIGN

Increasing physical activity through community 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

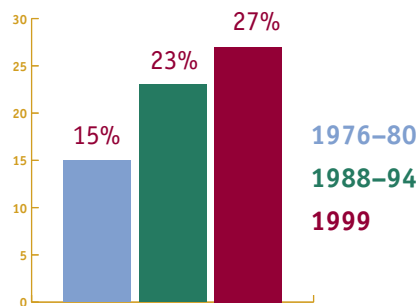
Physical inactivity plays a significant role in the most common chronic diseases in the U.S., including coronary heart disease, stroke, and diabetes; each of these is a leading cause of death.¹ More specifically:

- Physical inactivity is responsible for at least 200,000 deaths annually from chronic diseases, such as coronary heart disease, 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.⁴
- Physical inactivity can increase the risk of stroke and high blood pressure.⁵

- 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.⁷

- 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. A 2001 survey found that 58% of adults report being either overweight or obese.^{8*}
- The proportion of youth who are overweight and adults who are obese has more than doubled in the last 20 years.¹¹ This increase has led scientists to declare an "obesity epidemic."⁷

Obesity Rates in U.S. Adults, 1976–1999



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 Overweight

The estimated annual cost of obesity and overweight in the United States is approximately \$117 billion.⁷ The potential savings, if all inactive American adults became physically active, could be \$76.6 billion per year.¹⁰

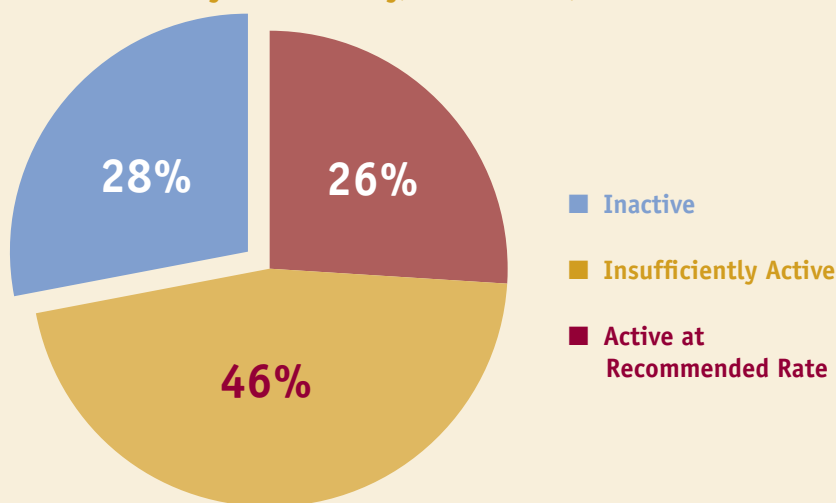


Physical Activity Patterns and Trends in the United States

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

- In 2000, only 26% of U.S. adults were achieving the recommended levels of physical activity; 28% reported no active leisure time.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 1999.⁹

Leisure-Time Physical Activity, U.S. Adults, 2000



Source: Behavioral Risk Factor Surveillance System

Creating Opportunities for Active Living

The 1990s did not show increases in active leisure time rates,¹² 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.



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.¹³ 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. We know much about how land use patterns can encourage routine physical activity:

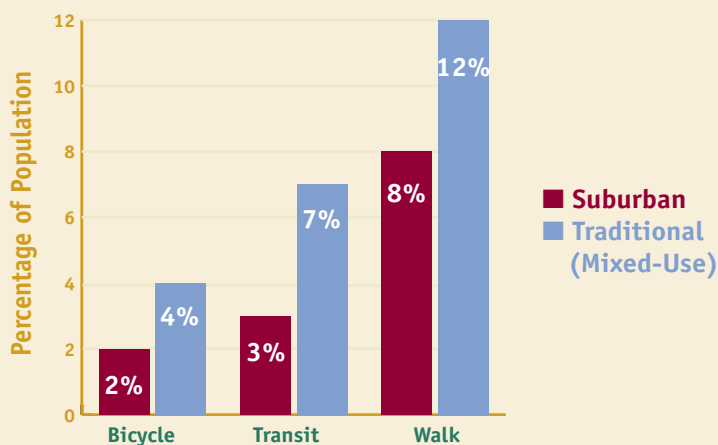
- Mixed land use increases the number and percentage of walking and biking trips; for trips less than one mile, mixed-use communities generate up to four times as many walking trips.¹⁴
- Walking trips tend to substitute for automobile trips in dense urban neighborhoods.¹⁵

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

Consider the following:

- Between 1982 and 1997, urban land density in the U.S. dropped by more than 20%, requiring greater reliance on cars for travel.¹⁶
- 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.¹⁷
- Acreage standards for schools recommended by many states and localities range from 10–60 acres. Older schools typically occupy only 2–8 acres.¹⁸ 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.¹⁸ Thirteen percent of school trips are made by walking, and 0.9 percent of school trips are made by bike.²⁶

Comparative Use of Physically Active Modes of Transportation in Mixed-Use Communities vs. Suburban Subdivisions



Source: Friedman, Gordon, Peers, Transportation Research Record 1466, 1996

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

Transportation 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

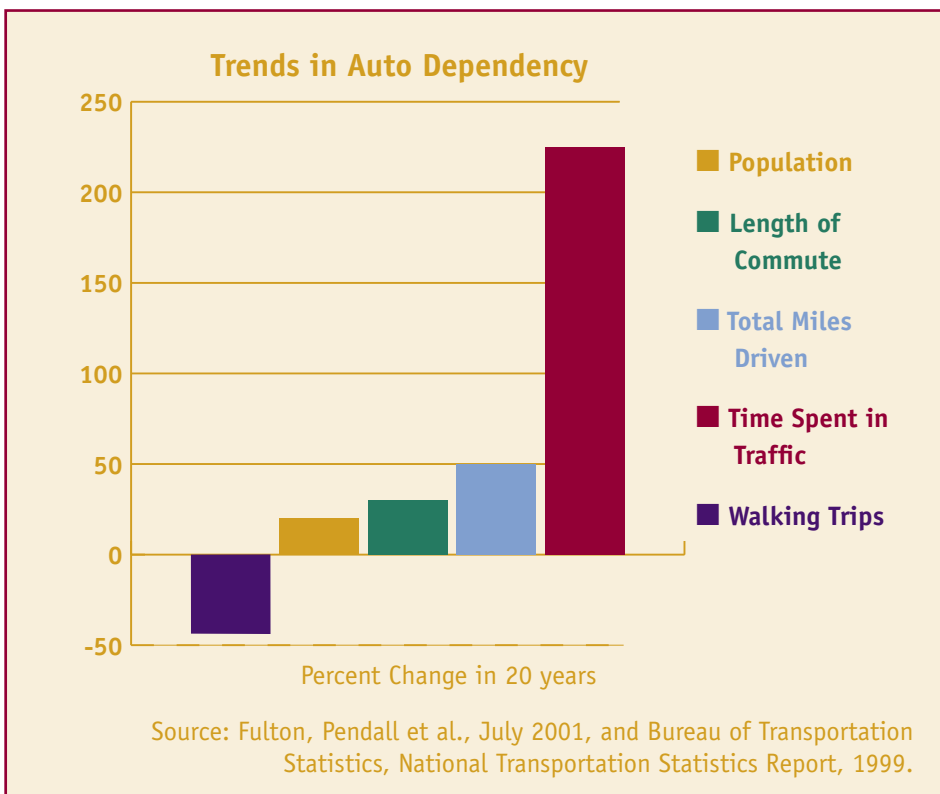
There is growing evidence that current transportation policies that promote automobile dependency adversely affect air quality and safety and discourage physical activity.¹³ A more balanced transportation system that offers more choices and encourages walking and biking would remove barriers to activity 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:

- People who report having access to sidewalks are 28% more likely to be physically active.²⁰
- 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.²¹

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 percent for children and adults, while driving trips increased to almost 90 percent of the total.²²



- During the past 20 years, the time we collectively spend in traffic grew 12 times as fast as the population, while the number of trips taken on foot dropped by 42 percent.²²
- One-fourth of all trips people make are one mile or less, but three-fourths of these short trips are made by car.²²
- 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.²²



- Children’s walking trips to school have declined by 40% between 1977 and 1995,¹⁹ and children between the ages of 5 and 15 make only 10–12% of their school trips by walking or riding their bicycles. Almost 70 percent of all children’s trips are by car.²²
- On average, states spend just 55 cents per person of federal dollars on pedestrian projects compared with 72 dollars per person on highway projects.²³



Transportation System Influences Active Lifestyles

Trends indicate a growing automobile dependency that reduces regular physical activity during daily routines. Opportunities exist, however, for positive transportation reform that supports more active lives. Transportation and land use policies must be integrated to shorten trips, especially to routine destinations, and provide more choice so that alternatives such as walking, bicycling and public transit are more accessible, safe, convenient, affordable and practical.

Parks, Trails and Greenways and Physical Activity

Parks, trails and greenways* are modes of transportation that can be linked to local destinations of interest, such as schools, shops, community centers, or workplaces. All three can help promote active living.



The Impact of Accessible Trails

Researchers have found positive relationships between settings for physical activity and physical activity patterns in adults.²⁰ Other studies suggest that the presence of a trail can increase physical activity among adults.

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

- In a University of Nebraska-Lincoln study, 29 percent of respondents reported that the presence of trails caused an increase in their physical activity. Another 56 percent of respondents stated they would use a trail if they had access to one in their community.²⁴
- In a Missouri survey, 55.2 percent 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.²⁵ This study also found that walking trails may be beneficial in promoting physical activity among women and people in lower socioeconomic groups.

- In a survey of U.S. adults, people with access to neighborhood parks were nearly twice as likely to be physically active as those without access to parks.²⁰

Incorporating Physical Activity Into 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. This form of active transportation is an excellent way to integrate physical activity into people's daily routines and achieve the Surgeon General's recommended goal 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.



Resources

Active Living by Design is a national program of The Robert Wood Johnson Foundation and is part of the School of Public Health at the University of North Carolina in Chapel Hill. The program will establish and evaluate innovative approaches to increase physical activity through community design, public policies and communications strategies. For more information, please visit our website (www.activelivingbydesign.org) or contact us via phone at 919-843-2523.

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

