



Quick Bites

Health and Co-Benefits of Active Transportation

Authors: Kelly Rodgers, Carey McAndrews, and Bill Scully

Active Travel Infrastructure

Active travel infrastructure is a proven strategy for increasing physical activity. How much more walking or cycling an individual or community obtains—the magnitude of the effect—depends on a variety of factors, including whether there are destinations within walking or bicycling distance, how direct the route is, and how safe and secure individuals feel. Active travel infrastructure includes the following:

- Street connectivity
- Sidewalk and trail infrastructure
- Bicycle infrastructure
- Public transit infrastructure and access
- Mixed land uses
- Access to parks and other recreational facilities

FACTORS

Objective measures of the built environment

How we plan and design the built environment affects opportunities for physical activity both at a neighborhood scale (aka macro scale) and in streetscape design (aka micro scale). At a neighborhood level, the objectively-measured features of the built environment (rather than perceived by residents) shown to influence walking for transportation include residential density, the diversity of land uses, the street network design, access to destinations, and distance to transit. Of these factors (often called the “5Ds”), a higher mix of land uses, a high intersection density, a close distance to transit, and nearby access to jobs and stores are the most influential for walking. Another systematic review confirmed that nearby transit and accessibility—a mix of land uses and nearby destinations—supported physical activity.

At a streetscape level, creating new walking, cycling, and public transit infrastructure supports physical activity. Streetscape characteristics—such as human-scaled buildings—are associated with walking and bicycling. Individuals are likely to walk more in areas with features such as streetlights, pedestrian crossings, and traffic-calming measures.

Perceptions and experience of the built environment

Perceptions, personal experience, and context matter for active transportation. Residents who perceive neighborhoods to be less walkable than what were objectively measured were less active and more likely to gain weight over time. Factors that affect perceptions of walkability include the amount and quality of green space.

Perceptions and objective experience of safety and security differ by socio-economic status, gender, race, and other personal characteristics. Those who perceive their neighborhood as unsafe have lower odds of achieving higher levels of physical activity, even if neighborhood

crime rates were not high. Women, older adults, and racial/ethnic minorities feel more vulnerable to crime and may have the perception they are less safe in crime-prone areas.

How residents perceive neighborhood features is slightly more important than objectively measured neighborhood features for recreational walking. However, for transportation-related walking, the objectively measured variables are slightly more significant. Because the agreement between these perceived and measured features is low, practitioners may want to consider resident perceptions less as a proxy for objective measures but as a complementary source of information. These findings underscore the need to engage with neighborhood residents to understand what they perceive as barriers to walking and cycling.

OUTCOMES

Health Benefits

Physical activity is one of the most important things an individual can do to improve their health. A lack of exercise is the primary cause of most chronic diseases. Low levels of physical activity contribute to cardiovascular disease, Type 2 diabetes, and certain cancers. About 48 percent of Americans have cardiovascular disease. Thirty-five percent of deaths from heart disease are due to a lack of physical activity. Undertaking physical activity—such as walking and cycling—results in several health benefits in addition to the reduced risk of chronic diseases, such as reduced anxiety, reduced risk of depression, and improved sleep. Walking can even help tame a sweet tooth. Walkable streets also provide opportunities for social interaction, building community cohesion, and trust.

Economic Development Benefits

Designing streets to be safe for active travel has economic benefits. A recent review of the literature found that improving active travel facilities generally has positive or non-significant economic impacts on retail and food service businesses near active travel facilities, although these improvements may negatively impact auto-serving businesses. Reducing traffic speed and volume may also support economic development. Increasingly, business leaders recognize the economic benefits of building cities for active transportation. Oklahoma City Mayor Mick Cornett said, “Business leaders buy in to the importance of having a healthy, vibrant community. It’s not just a matter of health care costs. How do you recruit the top talent if you can’t offer them the lifestyle they’re looking for?”

Environmental Benefits

The transportation sector is one of the leading contributors to greenhouse gases in the United States and so reducing reliance on automobiles is a climate mitigation strategy. Land use and transportation strategies that increase physical activity can also reduce the amount of driving, thereby decreasing greenhouse gas emissions. The “5Ds” referenced above are effective for reducing driving, particularly having good regional access to destinations. Reducing traffic speed and volumes has environmental benefits for communities by reducing emissions. Nearly half of automobile trips are less than 3 miles in length, which is a distance that can be walked or cycled provided adequate infrastructure exists. Converting these shorter trips to active transportation has strong environmental benefits as short trips produce more polluting cold starts.

Equity Benefits

Creating environments that are safe for walking and cycling helps those who cannot drive or cannot afford a car; these include many older adults, people with disabilities, children, and low-income individuals. There is also a racial disparity in access to cars as 19 percent of Black households do not own a vehicle compared to 6 percent of white households and 9 percent of all households. To ensure active travel infrastructure is equitably developed, practitioners should identify neighborhoods with the greatest need by examining active transportation infrastructure disparities—low-income neighborhoods and communities of color generally have poorer quality or unsafe infrastructure—and prioritize projects that serve the needs of individuals with transportation barriers, such as individuals without access to a private vehicle. Because many historically excluded populations (e.g., Black Americans, women) experience higher degrees of fear with regard to policing, crime, and harassment, practitioners should also ensure that barriers beyond infrastructure are addressed.

Unintended consequences

Few studies include information about the potential harms of active travel infrastructure. The Community Preventive Services Task Force postulated that expanded active travel infrastructure could increase the number of pedestrian or cyclist injuries. It noted that injuries could increase even if injury rates decline. Other potential harms include increased congestion, changes in access to parking, and residential displacement.

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