



Physical inactivity causes numerous physical and mental health problems, is responsible for an estimated 200,000 deaths per year, and contributes to the obesity epidemic.<sup>1</sup> The design of our communities and the presence or absence of parks, trails, and other quality public recreational facilities affects people's ability to reach the recommended 30 minutes each day of moderately intense physical activity.<sup>1</sup> Health, recreation, and planning professionals want to know how to design neighborhoods and recreational facilities that make it easier and more enjoyable for people to get up and get active.

This research summary gives a synopsis of the current state of peer-reviewed research into what constitutes an "activity-friendly environment" for recreational physical activity. Companion research summaries outline findings on the environments that encourage bicycling or walking for transportation, and the environmental influences on childhood obesity.

## RESEARCH SUMMARY

Being physically active is more than just a matter of personal choice. A growing number of studies show that people in activity-friendly environments are more likely to be physically active in their leisure time.<sup>2-5</sup>

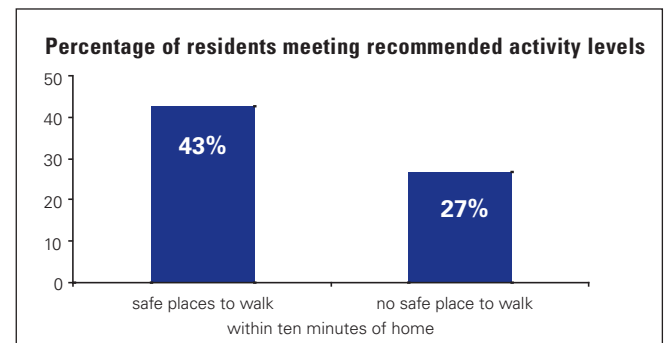
### Better access to facilities encourages activity

Several studies have found that people get more physical activity if they have good access to specific places to exercise, such as parks, basketball courts, or gyms, and if their neighborhoods provide a convenient, high-quality environment for outdoor activity.

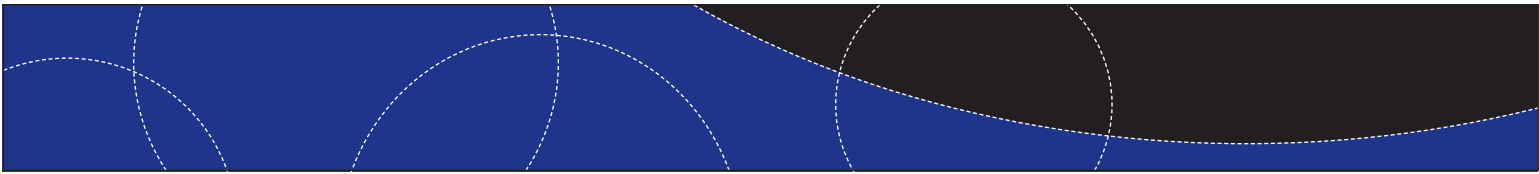
- The CDC determined that creating and improving places to be active can result in a 25 percent increase in the percentage of people who exercise at least three times a week.<sup>6</sup>
- People with the best access to a variety of built and natural facilities were 43 percent more likely to exercise 30 minutes most days than those with poor access.<sup>7</sup>
- The closer people lived to a bikeway, the more likely they were to use it.<sup>8</sup>

**An activity-friendly environment is a place that makes it easy to make the choice to be physically active, through planned exercise or routine daily activity.**

- 43 percent of people with safe places to walk within 10 minutes of home met recommended activity levels, while just 27 percent of those without safe places to walk were active enough.<sup>9</sup>



However, the research is not always consistent; a study in North Carolina found that the presence of sidewalks, trails, and street lights had little impact on recreational physical activity.<sup>10</sup>



## Pleasant surroundings encourage activity

Scenery, pleasant surroundings and the friendliness of neighbors were linked to physical activity levels in a number of studies. But it is not yet clear which factors are most important.

- People in Australia who reported they had friendly neighbors and attractive surroundings close to home were 41 percent more likely to walk.<sup>11</sup>
- Rural women in the US were more likely to be active if they reported attractive scenery near home.<sup>12</sup>

## Safe places encourage activity

It is not clear how much crime affects physical activity. The research to date shows that crime or fear of crime is linked to lower activity levels for women, especially minority women, and for young people and seniors. But the link is less clear for other groups.<sup>13</sup>

Direct links between traffic safety and levels of activity are also surprisingly weak in the literature.<sup>14</sup> But safety is obviously a concern for those promoting increased walking and bicycling.



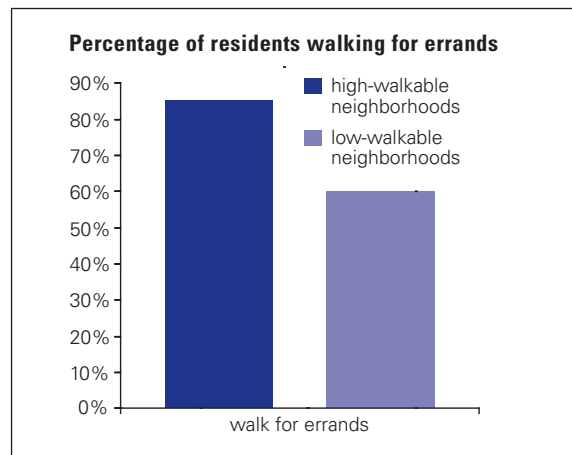
Photo by Jim Sallis

- Pedestrians are less safe where there are high traffic speeds, more miles of wide arterial streets, poor lighting, and poorly located bus stops and crosswalks.<sup>13</sup>
- Increasing the number of pedestrians on the street improves safety for all pedestrians.<sup>15</sup>

## Walkable neighborhoods encourage activity

“Walkable” neighborhoods are those where it is possible to walk to common destinations such as food stores. They are defined by a mix of homes and stores, connected streets, higher densities, and usually feature sidewalks and walking paths. (See the *Active Transportation*’ research summary for more)

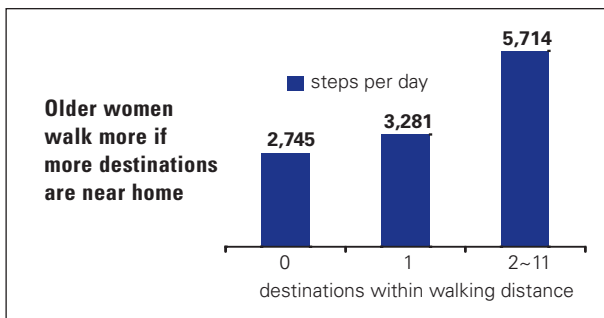
- Residents in South Carolina neighborhoods with well-maintained sidewalks and bicycling routes were more likely to reach the recommended 30 minutes of physical activity a day.<sup>16</sup>
- Based on objective accelerometer data, 37 percent of residents of the most walkable neighborhoods in Atlanta met physical activity recommendations, compared to just 18 percent of those living in low-walkability neighborhoods.<sup>17</sup>
- Residents in a highly walkable neighborhood engaged in about 70 more minutes per week of moderate and vigorous physical activity than residents in a low-walkability neighborhood.<sup>18</sup>



## Activity-friendly environments are important for seniors

A number of studies indicated that the environment affects physical activity differently for men, women, children, ethnic groups, and other population groups. There have not been enough studies to make definitive statements about optimal activity-friendly environments for specific groups.<sup>2,13,16</sup> But the growing population of older adults will likely benefit from more activity-friendly environments.

- Older adults living near safe walking and bicycle paths, gyms, parks, and recreation centers were more likely to be getting enough activity.<sup>19</sup>
- Older women who lived within walking distance of trails, parks, or stores recorded significantly higher pedometer readings than women who did not. The more destinations that were close by, the more they walked.<sup>20</sup>



### Improved environments get people moving and are cost-effective

While most studies compare activity levels in different types of environments, a few have shown that when access and opportunities improve, activity does too.

- Australian men and women who reported an increase in convenience of walking facilities in their neighborhoods were twice as likely to have increased their walking. Men also increased their walking if aesthetics improved; women walked more if traffic problems decreased.<sup>21</sup>
- In a survey of residents in rural Missouri, 55 percent reported they were walking more since the opening of a new trail, and this was even higher among people without a college education: 62 percent said they were walking more.<sup>22</sup>
- A study in Lincoln, Nebraska found that the cost of increasing physical activity by providing and maintaining trails equals about \$98 annually per newly-active trail user.<sup>23</sup>



www.pedbikereimages.org/Dan Burden

### Activity-friendly environments make active recreation an easier choice

Health researchers have studied a broad array of environmental factors that might influence physical activity. It is too soon to say *which* factors are the most important, but enough evidence has been gathered to show that activity-friendly environments help more people choose to engage in active living.



Photo by Dan Burden/PB/C



## REFERENCES

- 1 U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. (1996). *Physical activity and health: A Report of the Surgeon General*. Washington, DC: Government Printing Office
- 2 Owen, N., Humpel, N., Leslie, E., et al. (2004). Understanding environmental influences on walking: Review and research agenda. *American Journal of Preventive Medicine*, 27, 67-76.
- 3 Humpel, N., Owen, N., & Leslie, E. (2002). Environmental factors associated with adults' participation in physical activity. *American Journal of Preventive Medicine*, 22, 188-199.
- 4 Sallis, J., Prochaska, J., & Taylor, W. (2000). A review of correlates of physical activity of children and adolescents. *Medicine and Science in Sports and Exercise*, 32, 963-975.
- 5 Two prominent public health journals released special issues on health and the built environment that are recommended reading: Northridge, M. (Ed.), (1993). Built environment and health [Special issue]. *American Journal of Public Health*, 93, 1369-1608; Killingsworth, R. (Ed.), (2003). Health promoting community design [Special issue]. *American Journal of Health Promotion*, 18, 1-122.
- 6 Centers for Disease Control & Prevention, Guide to Community Preventive Services. (2002). *Creating or Improving Access to Places for Physical Activity is Strongly Recommended to Increase Physical Activity*. Retrieved January 10, 2004 from <http://www.thecommunityguide.org/pa/default.htm>.
- 7 Giles-Corti, B. & Donovan, R.J. (2002). The relative influence of individual, social, and physical environment determinants of physical activity. *Social Science and Medicine*, 54, 1793-1812.
- 8 Troped P.J., Saunders R.P., Pate R.R., et al. (2001). Associations between self-reported and objective physical environment factors and use of a community rail-trail. *Preventive Medicine*, 32, 191-200.
- 9 Powell, K.E., Martin, L., & Chowdhury, P.P. (2003). Places to walk: convenience and regular physical activity. *American Journal of Public Health*, 93, 1519-1521.
- 10 Huston, S., Evenson, K., Bors, P., et al. (2003). Neighborhood environment, access to places for activity, and leisure-time physical activity in a diverse North Carolina population. *American Journal of Health Promotion*, 18, 58-69.
- 11 Ball, K., Bauman A., Leslie E., et al. (2001). Perceived environmental and social influences on walking for exercise in Australian adults. *Preventive Medicine*, 33, 434-440.
- 12 Wilcox S., Castro C., King A.C., et al. (2000). Determinants of leisure time physical activity in rural compared with urban older and ethnically diverse women in the United States. *Journal of Epidemiology and Community Health*, 54, 667-672.
- 13 Committee on Physical Activity, Health, Transportation, and Land Use. (2005). *Does the built environment influence physical activity? Examining the evidence*. (Special Report 282). Washington, DC: Transportation Research Board/Institute of Medicine. Retrieved January 11, 2005 from [http://www.trb.org/news/blurb\\_detail.asp?id=4536](http://www.trb.org/news/blurb_detail.asp?id=4536).
- 14 Loukaitou-Sideris, A. (2004, June). Transportation, Land Use, and Physical Activity: Safety and Security Considerations. Prepared for the Committee on Physical Activity, Health, Transportation, and Land Use. Retrieved January 11, 2005 from <http://trb.org/downloads/sr282papers/sr282paperstoc.pdf>.
- 15 Jacobsen, P.L. (2003). Safety in numbers: more walkers and bicyclists, safer walking and bicycling. *Injury Prevention*, 9, 205-209.
- 16 Sharpe, P.A., Granner, M.L., Hutto, B., et al. (2004). Association of environmental factors to meeting physical activity recommendations in two South Carolina counties. *American Journal of Health Promotion*, 18, 251-7.
- 17 Frank, L.D., Schmid, T.L., Sallis, J.F., et al. (2005). Linking objectively measured physical activity with objectively measures urban form. *American Journal of Preventive Medicine*, 28 (252) 117-125.
- 18 Saelens, B., Sallis, J.F., Black, J., et al. (2003). Neighborhood-based differences in physical activity: An environment scale evaluation. *American Journal of Public Health*, 93, 1552-1558.
- 19 Booth, M. L., Owen, N., Bauman, A., et al. (2000). Social-cognitive and perceived environment influences associated with physical activity in older Australians. *Preventive Medicine*, 31, 15-22.
- 20 King, W.C., Brach, J., Belle, S. et al. (2003). The relationship between convenience of destinations and walking levels in older women. *American Journal of Health Promotion*, 18, 74-82.
- 21 Humpel, N., Marshall, A.L., Leslie, E., et al. (2004). Changes in neighborhood walking are related to changes in perceptions of environmental attributes. *Annals of Behavioral Medicine*, 27, 60-67.
- 22 Brownson, R.C., Housemann, R.A., Brown, D.R., et al. (2000). Promoting physical activity in rural communities: Walking trail access, use, and effects. *American Journal of Preventive Medicine*, 18, 235-241.
- 23 Wang, G., Macera, C.A., Scudder-Soucie, B., et al. (2004). Cost effectiveness of a bicycle/pedestrian trail development in health promotion. *Preventive Medicine* 38, 237-242.

---

Prepared by Barbara McCann. For updates and a web-based version, visit [www.activelivingresearch.org](http://www.activelivingresearch.org).

Active Living Research, a national program of The Robert Wood Johnson Foundation, encourages and supports cross-disciplinary research about environmental factors and policies with the potential to substantially increase physical activity among Americans of all ages, incomes and ethnic backgrounds. Active Living Research wants solid research to be part of the public debate about active living.

**Active Living Research**  
San Diego State University  
3900 Fifth Avenue, Suite 310  
San Diego, CA 92103  
[www.activelivingresearch.org](http://www.activelivingresearch.org)