

# Measuring Trails Benefits: Public Health

## How are trails related to public health?

Trails can improve public health by increasing physical activity and providing safer transportation routes for pedestrians and cyclists. In light of increasing chronic disease in the U.S., the Surgeon General has identified physical activity as one of the most effective actions people can take to improve their health.

Trails often encourage inactive people to become active and modestly increase the activity levels of already-active residents. Because they provide a safe environment, trails are the only place where many residents exercise.

The gains in physical activity are most significant in rural places with few parks and narrow road shoulders. Increased physical activity is greatest among people at greatest risk of inactivity, including people with low income, low education attainment, and the elderly.

Research has found that the benefits of reduced health care costs associated with increased physical activity on trails far outweigh the costs of trail construction.

Additional details on each of these topics, as well as other relevant research, are available at <http://headwaterseconomics.org/trail>.

## Select Research Highlights

- In [Morgantown, West Virginia](#), 60 percent of trail users report they exercise more regularly since they began using trails, and 47 percent of trail users report getting their recommended physical activity through trail use alone. Twenty-three percent of respondents did not exercise regularly before using the trails.<sup>1</sup>
- Walking trails in rural, [southeastern Missouri](#) increase exercise particularly among people most at risk of inactivity: those who were not already regular walkers, have a high school education or less, or who earn less than \$15,000 per year. Trails that are at least a half mile long, paved, or located in the smallest towns are associated with the largest increases in exercise.<sup>2</sup>
- In the [United Kingdom](#), separate studies of 10 different studies found significant improvements in self-esteem and mood after participants exercised outside in urban parks, farmland, forests, waterside, and wilderness. The greatest gains are seen after short duration, light exercise, and among the mentally ill.<sup>3</sup>
- Several communities<sup>4, 5</sup> and states<sup>6, 7</sup> have measured the [savings](#) in health care costs due to [residents' exercise](#) on trails, and [compared these benefits](#) to the costs of building the trails. Although it can be challenging to isolate physical activity associated only with trails, researchers have found the [benefits from reduced health care costs](#) far outweigh the [cost of trail construction](#).



### How to use this information:

This research is of interest to public health agencies, hospitals and medical providers, and others advocating for community health, particularly for low income or elderly people.

This research can help to inform strategies to improve public health through increasing physical activity on trails and support public investment in trails programs.

This summary is one of five handouts describing the state of research related to the benefits of trails. The four other summaries address:

- Business impacts
- Property value
- Quality of life
- General benefits

This series offers a succinct review of common benefits identified in the 100+ studies in Headwaters Economics' free, online, searchable [Trails Benefits Library](#).

- More residents using trails and pathways means [fewer accidents](#) between pedestrian and motor vehicles.<sup>6</sup>

## Methods

To measure health improvements associated with increased physical activity, researchers begin by measuring the change in residents' levels of physical activity after a trail is built. The [best examples](#) of these studies survey a [random sample](#) from the local population to determine the proportion of residents who use a trail<sup>1,3</sup> rather than relying on trail-side surveys, which only capture the activity levels of those who are already using a trail.

Some studies then apply this information to monetize public health gains and compare them to the cost of building and maintaining a trail, calculating a cost-effectiveness ratio. These studies use existing research that measures the change in prevalence of diseases for those with a sedentary versus active lifestyle, and assume that physically active residents will have lower disease incidence. Using data on average costs to treat these diseases, the authors estimate avoided health care costs attributable to trail use. The most careful studies use only the number of residents who are newly active due to a trail and for whom a trail is their only form of exercise.

Original studies and additional details on methods can be found in the Trails Benefits Library at <http://headwaterseconomics.org/trail>.

## Contact

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*“Building a  
community trail  
is a cost-effective  
approach to  
increasing  
community  
physical activity.”*

*- Abildso, Zizzi,  
Selin, and Gordon, 2012*

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## Footnotes

- 1 Abildso, C., S. Zizzi, S. Selin, and P. Gordon. 2012. “Assessing the cost effectiveness of a community rail-trail in achieving physical activity gains.” *Journal of Park and Recreation Administration* 30(2): 102-113.
- 2 Brownson, R., R. Housemann, D. Brown, J. Jackson-Thompson, A. King, B. Malone, and J. Sallis. 2000. “Promoting Physical Activity in Rural Communities: Walking Trail Access, Use, and Effects.” *American Journal of Preventive Medicine* 18(3): 235-242.
- 3 Barton, J., and J. Pretty. 2010. “What is the best dose of nature and green exercise for improving mental health? A multi-study analysis.” *Environmental Science and Technology* 44(10): 3947-3955.
- 4 Deenihan, G. and B. Caulfield. 2014. “Estimating the Health Economic Benefits of Cycling.” *Journal of Transport & Health* 1(2): 141-149.
- 5 Wang, G., C.A. Macera, B. Scudder-Soucie, T. Schmid, M. Pratt, and D. Buchner. 2005. “A cost-benefit analysis of physical activity using bike/pedestrian trails.” *Health Promotion Practice* 6: 174-179.
- 6 Grabow, M., M. Hahn, and M. Whited. 2010. *Valuing Bicycling’s Economic and Health Impacts in Wisconsin*. The Nelson Institute for Environmental Studies Center for Sustainability and the Global Environment at University of Wisconsin-Madison.
- 7 BBC Research & Consulting. 2014. *Community and Economic Benefits of Bicycling in Michigan*. Prepared for the Michigan Department of Transportation.