

# Research reveals link between fitness, health behaviors, built environment in largest US cities

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Two new studies from the Fairbanks School of Public Health on Indiana University's Indianapolis campus examined the link between health

behaviors, the built environment, and the health status of America's largest cities.

Using data from the American Fitness Index spanning from 2018 to 2022, the researchers determined that the maximum percentage of residents with good health status was 70 percent. The American Fitness Index is an American College of Sports Medicine initiative that quantitatively measures the overall health and [fitness level](#) of the 100 largest cities by population in the United States.

"Fitness and sports are vital parts of public health and well-being," said lead author Jiali Han, a professor and chair of the Department of Epidemiology in the Fairbanks School of Public Health.

"Our research underscores the pivotal role of fitness and health behaviors in shaping the health outcomes of entire communities. By understanding the association between individual choices and [community health](#), policymakers and public health officials can develop targeted interventions to promote healthier lifestyles and improve overall population health."

The researchers explored various fitness and health behaviors and their correlation with good health status among residents. They further examined how the built environment affected health and how it could be used to improve health behaviors.

## **Calculating a city's health status**

Good health status was defined as a complete state of physical, mental, and social well-being, not just by the absence of disease. The researchers used a mix of statistical models to measure health behaviors.

The behaviors included:

- Meeting aerobic and strength activity guidelines.
- Bicycling, walking or using public transportation to commute to work.
- Consuming two or more fruits or three or more vegetables a day.
- Sleeping more than seven hours per day.
- Avoiding smoking.

In 84 of the 100 largest U.S. cities, health status improved from 2018 to 2022. However, there was a 40% difference between Arlington, Virginia, which had the highest health status, and Fresno, California, which rated the lowest. Indianapolis ranked 93rd out of the 100 cities with an overall score of 32.4; Chicago ranked 13th with an overall score of 66.5.

Other key findings include:

- Across all 100 cities, on average, less than 50 percent of residents observed the [health behaviors](#) outlined above from 2018 to 2022.
- Higher percentages of residents engaging in physical activity, adhering to [dietary guidelines](#), and avoiding smoking were associated with cities' improved rates of good health.
- In the city with the highest aerobic activity score, 65% of residents met aerobic activity guidelines, compared to an overall average of 51% across all 100 cities.

## How the built environment affects health

The researchers determined that cities with higher walkability, a supportive infrastructure for biking, and more parks within [walking distance](#) for residents were associated with an improved health status.

"Our study included only modifiable measures," Han said. "City policymakers and community stakeholders can use these measures to

identify opportunities to improve the built environment."

The built environment factors included:

- Parks per 10,000 residents.
- Percentage of walking-distance parks.
- Park expenditures per [resident](#).
- Walkability of the city.
- Supportive city infrastructure for biking.
- Air-quality index.
- School [physical education](#) requirements.
- Complete Streets policy, which is how a community plans, designs, and maintains streets to ensure users of all ages and abilities are able to use streets safely.

Higher scores in walking-distance parks, walkability, bike infrastructure, and Complete Streets were independently associated with higher percentages of good health. These four factors are related to a person's level of [physical activity](#) and can be enhanced to improve population health.

"There is far-reaching potential in informing public health strategies aimed at reducing the burden of chronic diseases and improving quality of life nationwide," Han said. "This comprehensive analysis not only highlights the importance of adopting healthy behaviors on an individual level but also emphasizes the collective responsibility in fostering healthier environments within cities."

The papers "[Association Between U.S. Residents' Health Behavior and Good Health Status at the City Level](#)" and "[Association Between Built Environment Policy and Good Health Status](#)," were published in the *Translational Journal of the American College of Sports Medicine*.

**More information:** Bojung Seo et al, Association between Built Environment Policy and Good Health Status, *Translational Journal of the American College of Sports Medicine* (2024). [DOI: 10.1249/TJX.0000000000000255](https://doi.org/10.1249/TJX.0000000000000255)

Bojung Seo et al, Association between US Residents' Health Behavior and Good Health Status at the City Level, *Translational Journal of the American College of Sports Medicine* (2024). [DOI: 10.1249/TJX.0000000000000258](https://doi.org/10.1249/TJX.0000000000000258)

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