



RESEARCH BRIEF - APRIL 2016

# Physical Activity in Urban Areas

## Evidence from International Study Highlights Need for More Walkable Neighborhoods

### Introduction

Physical inactivity has been linked to diabetes, heart disease, and some cancers. It is a global problem, estimated to account for more than 5 million deaths per year worldwide. Adults tend to be more physically active when they live in areas that have higher density of people, and are near shops, services, restaurants, public transit, and parks, compared to residents of less-walkable areas. But the evidence showing the link between walkable features (the built environment) and physical activity has not always been consistent.

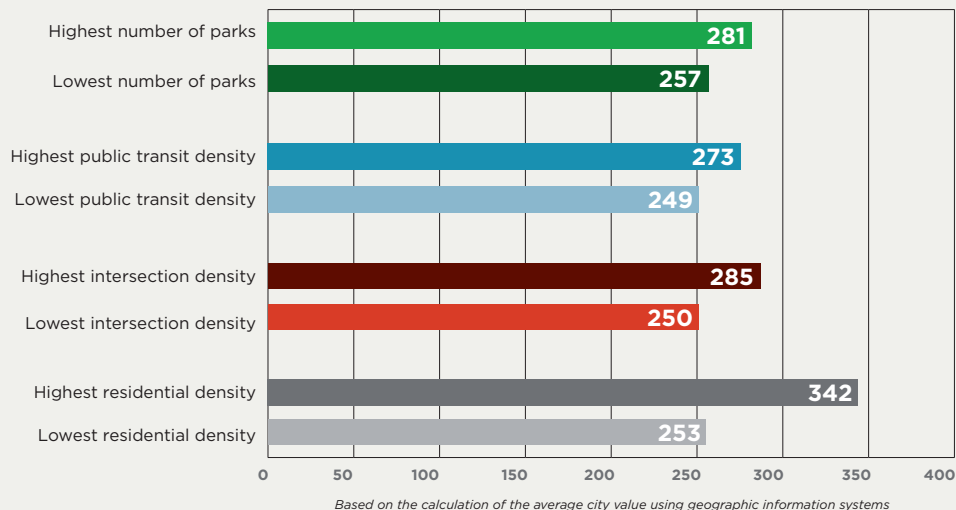
The purpose of this international study of 6,822 adults was to improve the quality of the evidence. The neighborhoods used in this study varied in socio-economic status and walkability. The study used geographic information systems (GIS) to measure residential density, number of street intersections, public transport stops, number of parks, mixed land use, and nearest public transport points. Physical activity was measured with small electronic devices, called accelerometers, worn around the waist for one week to record movement every minute.

The study included participants from 14 cities and surrounding regions in 10 countries: Belgium (Ghent), Brazil (Curitiba), Colombia (Bogota), Czech Republic (Olomouc), Denmark (Aarhus), China (Hong Kong), Mexico (Cuernavaca), New Zealand (North Shore, Waitakere, Wellington, and Christchurch), the United Kingdom (Stoke-on-Trent), and the United States (Seattle, WA and Baltimore, MD).

### Main Findings

- Residential density, number of public transport stops, number of street intersections and number of parks within walking distance were found to be the most activity-friendly characteristics of a neighborhood.
- Each of these activity-friendly characteristics was independently related to physical activity. The relationships with physical activity were also linear; for example, the higher the level of residential density, the higher the level of physical activity.
- Adults who lived in the most activity-friendly neighborhoods did 48 to 89 minutes more physical activity per week than those in the least activity-friendly neighborhoods. This difference is much larger than has been reported in other studies.
- The relationships between a neighborhood's characteristics and the physical activity of residents were generally similar across diverse cities.
- Mixed land use and nearest public transit point were not, however, significantly related to physical activity levels.

## Weekly minutes of moderate-to-vigorous physical activity by neighborhood characteristics



### Conclusions & Implications

Overall, the unique use of objective measures of neighborhood characteristics and physical activity increase the precision and credibility of this study's findings.

- The similarity of findings across various cities and various socio-economic groups suggest that changing the built environment is a solution that can be applied to improve health internationally.
- This study adds strength to previous calls to approach the prevention of major chronic diseases through policy changes in urban planning, public transport, and development of parks and recreational facilities that will increase physical activity.
- Living in an activity-friendly neighborhood can provide between 32-59 percent of the 150 minutes of weekly physical activity that is recommended for adults to maintain good health.
- Because the relationships between activity-friendly neighborhood characteristics and physical activity were linear, every improvement in the built environment can be expected to increase physical activity, irrespective of whether the residents of that city are starting at a low or high level.
- The large differences in physical activity between participants living in the most and least activity-friendly neighborhoods provide strong justification for public health agencies to work with other constituencies – particularly the urban planning, parks and recreation, and transport sectors – in order to create healthier cities.

- Making cities more activity-friendly could be an important part of substantial long-term and sustainable solutions to the global problems of death and disease associated with physical inactivity.
- A comprehensive approach that increases as many walkable features as possible is needed to design activity-friendly neighborhoods.

### About the Study

The International Physical Activity and Environment Network (IPEN) developed this study. The U.S. National Cancer Institute of the National Institutes of Health provided funding for coordination. Studies in each country were funded by different sources.

This issue brief is based on: Sallis J, Cerin E, Conway T, Adams M, Frank L, Pratt M, Salvo D, Schipperijn J, Smith G, Cain K, Davey R, Kerr J, Lai P, Mitáš J, Reis R, Sarmiento O, Schofield G, Troelsen J, Van Dyck D, De Bourdeaudhuij I, and Owen N. Physical activity in relation to urban environments in 14 cities worldwide: a cross-sectional study. *The Lancet*. April 2016.

The entire study is available at: [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(15\)01284-2/abstract](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)01284-2/abstract)

For more information, please see:

[www.ipenproject.org](http://www.ipenproject.org)

and <http://activelivingresearch.org/blog/2016/03/designing-global-cities-active-living>

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