Zoning Elements are Associated with Walking Behaviors in a Nationwide Evaluation

This factsheet serves as a companion document to the product *Components of Local Land Development and Related Zoning Policies Associated with Increased Walking: A Primer for Public Health Practitioners*. This factsheet summarizes key findings from a recently completed nationwide evaluation of the relationship between zoning elements supportive of walking and both leisure time and active travel-related walking.

Communities seeking to make their land development policies and plans more supportive of walking may consider ensuring that specific elements are included in their zoning codes. Such elements or structural provisions include, but are not limited to: mixed use development; sidewalks; crosswalks; bike or pedestrian trails or paths; bike, pedestrian, and street network connectivity; parks and open space; and other types of pedestrian infrastructure such as street furniture and traffic calming measures.¹⁻⁶

Prevalence of Elements in Zoning Codes that Promote Walking

Specific Zoning Elements are Associated with Walking and Additional Benefits

This nationwide evaluation of zoning codes found that places with zoning elements were more likely to have low physical inactivity among adults aged 65 and older. All zoning elements, with the exception of crosswalks, were associated with lower rates of physical inactivity among adults aged 18-64. All zoning elements except crosswalks were also associated with higher rates of recreational walking among adults aged 18-64.

ZONING FOR MIXED USE DEVELOPMENT

<table>
<thead>
<tr>
<th>Element</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIXED USE DEVELOPMENT</td>
<td>67.3%</td>
</tr>
<tr>
<td>SIDEWALKS</td>
<td>76.2%</td>
</tr>
<tr>
<td>CROSSWALKS</td>
<td>22.4%</td>
</tr>
<tr>
<td>TRAILS OR PATHS</td>
<td>56.7%</td>
</tr>
<tr>
<td>BIKE OR PEDESTRIAN CONNECTIVITY</td>
<td>37.2%</td>
</tr>
<tr>
<td>STREET CONNECTIVITY</td>
<td>34.6%</td>
</tr>
<tr>
<td>OPEN OR GREEN SPACE</td>
<td>94.5%</td>
</tr>
<tr>
<td>OTHER PEDESTRIAN FRIENDLY INFRA</td>
<td>74.1%</td>
</tr>
</tbody>
</table>

**ZONING FOR MIXED USE DEVELOPMENT IS ASSOCIATED WITH:**

- 3.1% lower rates of physical inactivity among adults aged 18-64¹⁰
- 4.1% lower rates of physical inactivity among older adults aged 65 and above
- 3% higher rates of recreational walking among adults (including both adults aged 18-64 and older adults aged 65 and above)

**ZONING FOR SIDEWALKS IS ASSOCIATED WITH:**

- 3.4% lower rates of physical inactivity among adults aged 18-64¹⁰
- 4.1% lower rates of physical inactivity among older adults aged 65 and above
- 2.9% higher rates of recreational walking among adults (including both adults aged 18-64 and older adults aged 65 and above)
- Reduced income-based disparities in rates of active travel (walking, biking, or public transit) to work⁷
ZONING FOR CROSSWALKS IS ASSOCIATED WITH:
- 1.9% lower rates of physical inactivity among older adults aged 65 and above
- Reduced income-based disparities in rates of active travel to work
- Higher rates of active travel to work among communities with higher poverty rates relative to those with lower poverty rates

ZONING FOR BIKE AND PEDESTRIAN TRAILS OR PATHS IS ASSOCIATED WITH:
- 3% lower rates of physical inactivity among adults aged 18-64
- 4.4% lower rates of physical inactivity among older adults aged 65 and above
- 3.4% higher rates of recreational walking among adults aged 18-64
- 3.5% higher rates of recreational walking among older adults aged 65 and above
- Reduced income-based disparities in rates of active travel to work

ZONING FOR BIKE AND PEDESTRIAN CONNECTIVITY IS ASSOCIATED WITH:
- 2.1% lower rates of physical inactivity among adults aged 18-64
- 3.9% lower rates of physical inactivity among older adults aged 65 and above
- 1.8% higher rates of recreational walking among adults aged 18-64
- Reduced income-based disparities in rates of active travel to work
- Higher rates of active travel to work among communities with higher poverty rates relative to those with lower poverty rates

ZONING FOR STREET CONNECTIVITY IS ASSOCIATED WITH:
- 2.3% lower rates of physical inactivity among adults aged 18-64
- 3.4% lower rates of physical inactivity among older adults aged 65 and above
- 1.9% higher rates of recreational walking among adults aged 18-64
- Reduced income-based disparities in rates of active travel to work
- Higher rates of active travel to work among communities with higher poverty rates relative to those with lower poverty rates

ZONING FOR OPEN OR GREEN SPACE IS ASSOCIATED WITH:
- 3.2% lower rates of physical inactivity among adults aged 18-64
- 4.3% lower rates of physical inactivity among older adults aged 65 and above
- 3.1% higher rates of recreational walking among adults aged 18-64
- 3.5% higher rates of recreational walking among older adults aged 65 and above
ACKNOWLEDGEMENTS

Funding for the development of this product was provided by the Centers for Disease Control and Prevention (CDC), National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity and Obesity (contract number 200-2016-M-91106) and the CDC-funded Physical Activity Research Network Plus (PAPRN+) Collaborating Center at the Illinois Prevention Research Center (grant number U48DP005010, SIP 14-025). The views presented in this document do not necessarily reflect the views and/or positions of CDC. Data on the zoning codes and associations between the zoning codes and the activity outcomes were originally compiled by researchers at the Institute for Health Research and Policy (IHRP) at the University of Illinois at Chicago (UIC) as part of a grant from the National Institutes of Health, National Cancer Institute (grant number R01CA158035, PI Jamie Chriqui). References


BRIEF OVERVIEW OF STUDY METHODS

Zoning codes in effect as of 2010 were compiled and evaluated for the largest 496 counties and 4 consolidated cities in the United States (US) and 3,921 municipalities located in 472 of those counties and 3 consolidated cities. Collectively, the counties and consolidated cities covered 75.03% of the US population and the municipalities covered 47.40% of the US population with unincorporated county areas covered by county zoning. Each jurisdiction’s zoning code was evaluated for the presence of zoning code reforms and then linked to data from the Centers for Disease Control and Prevention’s Behavioral Risk Factor Surveillance System (BRFSS) for county-level leisure time-related walking and inactivity and to the Census Bureau’s American Community Survey for municipal-level active travel to work-related behaviors. Full descriptions of the study methods are described elsewhere.6-11

Graphic design and layout were completed by Claudia Grosz.