IPEN ADULT STUDY

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IPENetwork goals

http://www.ipenproject.org

• increase communication and collaboration between researchers investigating environmental correlates of physical activity
• stimulate research in physical activity and the environment recommend common methods and measures
• support researchers through sharing of information, feedback, letters of support etc.
• bring together data from multiple countries for joint analyses
• aid in the publication of data through papers, special journal issues, symposia
IPEN Adult Study in 12 Countries

- Australia
- Belgium
- Brazil
- Colombia
- Czech Republic
- Denmark
- Hong Kong
- Mexico
- New Zealand
- Spain
- United Kingdom
- United States
Timeline – a decade of effort

- IPEN launch Mainz 2004
- NQLS 2000
- NIH funding 2008
- Data collection complete 2012
- Methods published 2012
- Variables created 2013
- Results published 2014
- Policy Impact?
Goal: Maximizing variance within and between countries

BUT relationship between walking and walkability may not be linear
## Walkability x Income

<table>
<thead>
<tr>
<th>Income</th>
<th>Walkability</th>
</tr>
</thead>
<tbody>
<tr>
<td>High High</td>
<td>High High</td>
</tr>
<tr>
<td>High Low</td>
<td>Low High</td>
</tr>
<tr>
<td>Low Low</td>
<td>Low Low</td>
</tr>
</tbody>
</table>
## Methods

N=14,000+

<table>
<thead>
<tr>
<th>Objective</th>
<th>Built Environment</th>
<th>Physical Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
<td>GIS half &amp; 1km buffers</td>
<td>Accelerometers</td>
</tr>
<tr>
<td>Self report</td>
<td>NEWS</td>
<td>IPAQ</td>
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Comparability?

• Standard design & measures recommended
• Quality control efforts by coordinating center
• Outside review of measures collected
• Standard statistical approach
Results so far
GIS Walkability Index

1 KM BUFFERS, WALKABILITY INDEX (Z SCORES)
Density of Parks (any size)
Transportation PA

- Any bicycling for transport (%)
- > 150 mins walking for transport (%)
Aesthetics & recreational walking
Safety from crime & BMI
Perceived land use & accelerometer MVPA

![Graph showing moderate-to-vigorous physical activity (min/day) vs. perceived land use mix - access. The graph indicates that 4 min/day is a notable threshold.](image-url)
GIS Measures & Accelerometer MVPA

25 min/day
Transportation walking and perceived density

Odds of 150 minutes or more of walking

Perceived residential density
Transportation cycling and perceived density
Main effects by city for associations between perceived infrastructure and any cycling

Most results generalized across cities

Adelaide
Ghent
Curitiba
Bogota
Olomouc
Hradec Kralove
Aarhus
Hong Kong
Cuernavaca
North Shore
Waitakere
Wellington
Christchurch
Pamplona
Stoke-on-Trent
Seattle
Baltimore

Odds ratio and 95% confidence interval for one unit change in infrastructure
Policy implications

• Many relationships are not linear
  – Studies of environments where relationship is “flat” would not show significant results
• Thresholds can provide more specific advice for what environments are supportive
• US environment is well suited to bicycling
  – Funding
  – Build guidelines
• Effects appear to be consistent across the globe, we can learn from supportive initiatives in other countries