NCI Webinar: Place-Based Strategies for Disease, Injury, and Violence Prevention
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Webinar Overview

NCI Webinar: Place-Based Strategies for Disease, Injury, and Violence Prevention
Place-Based Strategies for Disease, Violence, and Injury Prevention in Urban Areas

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Place matters
Neighborhood Physical Environment:
• Food & rec resources
• Built Environment
• Natural spaces
• Quality of housing
• Services

Neighborhood Social Environment:
• Safety/violence
• Social connections
• Local Institutions
• Norms

Stress
Behavior

Health

Segregation by race & SES
Resource inequalities

Personal characteristics: biology, material & psychosocial resources

Diez Roux AJPH, 2010

Resource inequalities
Improving Urban Environments as a Public Health Strategy

Can urban place- and nature-based interventions improve public health and safety?

Before

vacant-lot greening

After

doors & windows treatment
Health Outcomes Tied to Urban Nature Exposure

- Mortality
- Heart rate
- Mental health
- Crime & violence
- Post-operative recovery

+ Attention
- Mood

Vacant Properties

- Trash dumping
- Rodents
- Pathogens
- Illicit activity
- Fear, anxiety, stress, depression
Vacant Properties in Philadelphia

- 40,000 vacant land parcels
  - 23.1% owned by city
  - 76.9% privately owned

- Abandoned buildings per capita:
  - 1st Baltimore
  - 2nd Detroit
  - 3rd Philadelphia
Doors and Windows Treatment & Crime

Adjusted Difference-in-Differences Estimates of Violation Compliance on Point-Level Crime Outcomes

Adjusted Difference-in-Differences Estimates of Renovation Permits on Point-Level Crime Outcomes

Results: Significant reductions in all crimes, assaults, gun assaults, nuisance crimes
Contractor vs. Community Greening in Youngstown, OH 2011-2014


Photos: Youngstown Lots of Green Overview Report
Contractor vs. Community Greening in Youngstown, OH

244 greened lots randomly matched with 959 control vacant lots

Contractor vs. Community Greening in Youngstown, OH

- Significant reductions in burglaries and robberies (all lots & clean & green lots); reductions in assaults and violent felonies (community reuse lots)
- Increases in motor vehicle theft (all lots)
- Spill-over crime-reduction effects into neighboring areas, especially with community reuse lots

Vacant Lot Greening Studies

1. Retrospective Quasi-experimental
   - 2011

2. Prospective Pilot RCT
   - 2012

3. Youngstown Quasi-experimental
   - 2015

4. Prospective Citywide RCT
   - 2018

Outcomes: crime, safety, stress, mental health
Citywide cluster randomized trial to restore blighted vacant land and its effects on violence, crime, and fear

Methods:
- 541 vacant lots randomly assigned to treatment and control
- Outcomes: crime/violence data; health outcomes from 445 participants; ethnographic observations
- 38-month study period
- Intention to Treat Analysis (ITT)

Funders:
- National Institute on Alcohol Abuse and Alcoholism (NIAAA)
- National Institute on Drug Abuse (NIDA)
- CDC

Findings:

- Significant reductions in crime overall (−13%), gun violence (−29%), burglary (−22%), and nuisances (−30%) in neighborhoods below the poverty line.
- Significantly reduced perceptions of crime, vandalism, and safety concerns; and significantly increased use of outside spaces for relaxing and socializing.

442 participants surveyed before and after intervention

Significant decrease in depression and feeling of worthlessness for participants living near treatment lots

No change in feeling nervous, hopeless, restless, that everything is an effort, or poor mental health

Everyday environments can influence health and safety.

A B S T R A C T

Everyday environmental conditions impact human health. One mechanism underlying this relationship is the experience of stress. Through systematic review of published literature, we explore how stress has been measured in real-time non-laboratory studies of stress responses to deliberate exposure to outdoor environments. The types of exposures evaluated in this review include: nature viewing, outdoor walks, outdoor exercise and gardening. We characterize study design, modalities of stress measurements, and statistical estimates of effect and significance. Heart rate, blood pressure, and self-report measures provide the most convincing evidence that spending time in outdoor environments, particularly those with green space, may reduce the experience of stress, and ultimately improve health. More work is needed to understand effects of in situ modifications to outdoor environments on residents’ stress response.
Does vacant-lot clean & green impact stress levels of nearby residents?

Significant drop in heart rate (marker of acute stress) when walking in view of newly greened vacant lots


*Greening site:* -15.6 bpm, $p < .001$

*Control site:* -1.7 bpm
Return on Investment


<table>
<thead>
<tr>
<th>Assault Type</th>
<th>Abandoned Building Remediation, % (95% CI)</th>
<th>Vacant Lot Remediation, % (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firearm</td>
<td>-39.2 (-50.1, -27.5)</td>
<td>-4.6 (-5.0, -4.2)</td>
</tr>
<tr>
<td>Nonfirearm</td>
<td>-13.0 (-18.5, 7.4)</td>
<td>-0.4 (-0.7, 0.1)</td>
</tr>
<tr>
<td>All</td>
<td>-19.6 (-27.7, 11.1)</td>
<td>-2.2 (-2.4, -1.9)</td>
</tr>
<tr>
<td>Period of sustained effect</td>
<td>12.0 mo</td>
<td>45.8 mo</td>
</tr>
</tbody>
</table>

Vacant lots:
- Typical cost $1600, $180/year maintenance
- $26 in net benefits to taxpayers and $333 to society at large, for every dollar invested

“Neighborhood toxicity” a stronger predictor than poverty of lower income mobility, and higher rates of teenage birth and incarceration as an adult

- High rates of violence, incarceration and lead exposure

- Black children disproportionately burdened by harshness/toxicity
Other Intervention Studies

- Abandoned Building Renovation Study (NIH National Institute on Alcohol Abuse and Alcoholism; C. Branas & J. MacDonald; Philadelphia)

- Youth Violence Prevention Center (CDC; U Mich; M. Zimmerman; Flint, Youngstown, & Camden)

- New Orleans Healthy Neighborhoods Study (NIH National Institute of Child Health and Human Development (NICHD); RWJF; Tulane; K. Theall)
  - To evaluate the impact of blight remediation of neighborhood lots on family violence and youth violence; examine the moderating impact of community level buffers

In development: Baltimore, Wilmington, Pittsburgh
Questions Regarding Practice

- Who is doing vacant land mitigation or other place-based interventions?
- How are they funded?
- What are the practical challenges and barriers?
- What tools do they need?
- What was/is the return on investment?
LATEST RESEARCH on trees' impact, from air quality to equity

BEST PRACTICES from communities of all sizes

SELF-ASSESSMENT TOOL for your community’s needs and goals

STEP-BY-STEP GUIDE to build your own urban forest program

HUNDREDS OF RESOURCES including technical guides, polices and plans

Photo courtesy Visit Denver
Human Health

Urban forests reduce a variety of health issues, such as respiratory diseases and skin cancer, and promote an active lifestyle, which can reduce obesity.

RESEARCH

Social Impact

Mental Impact

Physical Impact

CASE STUDIES

Little Rock Combats Chronic Diseases Through “Medical Mile Trail”

Philadelphia LandCare Program

El Paso, TX: Campus Expands Urban Forest 60% for Mental Health

Louisville, KY: Green Spaces Make Healthier Places

New York, NY: Streets without trees harm kids and seniors

Amigos de los Rios and the Emerald Necklace
Thank you

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