cityhealth
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Deep Dive

Greenspace Policies

Public greenspaces, from parks to trails to public commons, help families be healthier in body and mind and keep our environment thriving. Simply walking or sitting for about 15 minutes in a park can significantly improve daily mental health. Greenspace policies ensure all families, not just a few, have access to public land, nature, and their benefits.

The Challenge

- Access to greenspace, including community schoolyards, public parks, walking trails, and other open spaces, is associated with improved mental health and sense of well-being among city residents.[1]

- Other benefits associated with greenspace include reduced violence, decreased mortality, lower heart rate, improved attention and mood, and a higher likelihood of physical activity.[2,3]

- Neighborhoods that were historically subjected to redlining, the systematic practice of denying loans and other resources to people based on their race or ethnicity, tend to have significantly less tree cover and experience hotter temperatures than non-redlined neighborhoods.[4,5]

A Healthy Solution: Greenspace Policies

- **Improves Mental Health** – Greenspace can have positive effects on both the mind and the body. A review of studies of college student mental health found that as little as 10 minutes of sitting or walking in natural settings positively affected both psychological and physiological markers of student mental well-being.[6]

- **Helps the Environment Thrive** – Cooling and other climate benefits of parks can extend as far a half-mile from the park boundaries.[7,8]

- **Cuts Pollution** – Green infrastructure can also reduce runoff and filter out up to 95% of storm water pollutants.[9] Urban tree, shrub, lawn, and pervious soil coverage can improve air quality, and trees in particular play a vital role in reducing air pollution.[10]

- **Saves Lives** – A 2018 study that examined U.S. county-level spending on parks and recreation between 1980 and 2010 found that a $100 increase in per capita investment was associated with 3.4 fewer deaths per year per 100,000 people.[11]

What's the Evidence that Greenspace Policies Can Improve Health?

People thrive in nature. Having greenspace within easy walking distance is good for both physical and mental health. Parks can facilitate increased physical exercise, as well as a greater sense of well-being.[1] Trees contribute to improved health by reducing carbon and providing shade, which adds protection during periods of intense heat.[10] A substantial body of research associates greenspace with both lower mortality and improved mental health:

Lower Mortality

- Systematic reviews of the relationship between urban nature and health have shown that access to greenspace has been associated with lower mortality, reduced heart rate and violence, improved attention and mood, and increased or higher likelihood of physical activity.[2,3]

- A recent health impact assessment estimated that, if the city of Philadelphia achieves 30% tree canopy coverage by 2025, 403 premature deaths—mostly in areas of lower socioeconomic status—could be prevented annually.[12]

- Less access to greenspace is also associated with two leading risk factors for infant mortality— low birthweight and small for gestational age—with heightened effects among mothers in lower socio-economic strata, according to a 2017 study of Connecticut births (n=239,811).[13]

Mental Health

- In a randomly controlled trial in Philadelphia, participants living in neighborhoods where vacant lots were turned into usable greenspaces (e.g., "pocket parks") reported decreased feelings of depression (by 41.5%) and decreased poor mental health (by 62.8%) compared to residents in similar neighborhoods.[1]

- A study of Wisconsin residents found that higher levels of greenspace in a neighborhood, whether urban or rural, were associated with significantly lower levels of depression, anxiety, and stress—even after controlling for a wide range of possible reasons.[14]

- A nationally representative study of England's adult population found that more than two hours per week of contact with nature—either through one longer exposure or several shorter exposures each week—significantly increased the likelihood of adults reporting good health or high well-being.[15]

- Danish researchers, using high-resolution satellite data to measure amounts of vegetation near approximately one million people's places of residence from birth to age 10, found that high levels of greenspace were associated with lower risk of a

wide range of psychiatric disorders in later life. Conversely, people living with the least amount of green space were at up to 55% greater risk of subsequent mental illness.[16]

- A study of 46,786 adults in Australia found that those living in closer proximity to more greenspace, and particularly to greater tree canopy, were significantly less likely to experience psychological distress.[17]

How Can Greenspace Polices Help Address Health Disparities?

Inequities in greenspace stem from decades of structural racism and injustice. Redlining, for example, was the systematic practice of denying loans and other types of resources to people based on their race or ethnicity. The practice contributed to people of color being unable to move out of low-income, under- resourced, unsafe neighborhoods, and still contributes to poor neighborhood health outcomes today.[18]

Physical & Mental Well-Being

- A study of 108 U.S. cities found that 94% of formerly "redlined" communities were hotter than non-redlined neighborhoods.[4] A 2013 study utilizing the National Land Cover Dataset found that Black residents were 52% more likely to live in heat risk-related land cover conditions compared to non-Hispanic Whites, and that heat risk-related land cover conditions had a dose response relationship with racial segregation in metro areas.[19]

- Throughout the country, there are significant racial inequities in urban forest cover, according to a meta-analysis of 40 studies.[5]

- In terms of physical health, persons with asthma and people of color, especially Black mothers, are most at risk for poor birth outcomes as a result of exposure to heat and pollutants.[20] A study of heat-related deaths from 2004-2018 determined that non-Hispanic American Indian/Alaska Natives and non-Hispanic Blacks had the highest rates of heat-related deaths.[21]

- Access to greenspace is associated with lower mental health disparities. A study of more than 21,000 urban residents in 34 European countries examined associations between financial strain, mental well-being, and access to five different types of neighborhood resources: green/recreational areas, postal services, banking services, public transport, and cultural facilities (such as a cinema or theater). Of these, only access to green/recreational areas was associated with higher levels of mental well-being. Further, socioeconomic inequality in mental well-being was 40% narrower among respondents who reported good access to greenspaces.[22]

Public Safety

- In the U.S., higher-income people are more likely to live near and use public parks.[23] Urban greening interventions are increasingly working to address this disparity. Greening interventions may also reduce crime and violence,[24] which are more likely to occur in lower-income and minority neighborhoods.[25]

- Philadelphia's model intervention found that vacant lot greening reduced perceptions of crime overall by 36.8%, as well as safety concerns about going outside by 57.8%. In neighborhoods below the poverty line, the intervention was associated with a 13.3% reduction in overall crime, a 29.1% reduction in gun violence, a 21.9% reduction in burglary, and a 30.3% reduction in nuisances.[26]

What Are Some Future Issues to Consider?

The very structural inequities that contribute to an unequal dispersion of green space in American cities may also complicate the task of addressing those disparities. A study of Boston tree planting initiatives and their implications for environmental justice found that equitable distribution of urban tree canopy cover may be difficult to achieve due to factors such as a lack of funding and physical availability of tree planting sites in targeted neighborhoods.[27] These challenges vary by city due to climate differences as well as cities' historical designs.

Resources for Cities

Center for Watershed Protection: Review of the Available Literature and Data on the Runoff and Pollutant Removal Capabilities of Urban Trees
Trust for Public Land: The 10-minute Walk Campaign
Trust for Public Land: The Heat is On Report

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