Urban Nature & Human Health: The Research Evidence

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Urban Trees, Green Spaces
Human Wellness, Mental Health

Examples of the evidence

What is trending in the research?
Urban Forests and Newborns
the natural environment may affect pregnancy outcomes . . .

10% increase in tree-canopy cover within 50m of a home
= lower number of low weight births (1.42 per 1000 births)

Donovan et al., Health & Place 2011;
Hystad et al., Env Health Perspectives 2014
Healthy Microbiome

- control obesity & asthma
- boost immune function
- improve mental health

Bloomfield et al. 2016 Perspectives in Public Health

put aside the Hygiene Hypothesis

need contact with ‘Old Friends’
intestinal microbiome development

Arrieta et al. 2014. Frontiers in Immunology

~10 to 100 trillion microbes in healthy gastrointestinal (GI) tract
forest bathing & therapy
The medicine of being in the forest
We are the leading global voice for forest bathing and forest therapy

Santa Rosa, California
Tree cover shows an inverse relationship with depressive symptoms in elderly residents living in U.S. nursing homes

Matthew H.E.M. Browning a, b, c, Kangjae Lee b, Kathleen L. Volf d
Data Story: Nature for Human Health Benefits Across the Life Cycle
Urban Trees, Green Spaces
Human Wellness, Mental Health

Examples of the evidence

What is trending in the research?
Green Cities: Good Health
www.greenhealth.washington.edu

Sponsors:
USDA Forest Service,
(U&CF Program + Pacific NW Research)
University of Washington
NGO partners

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Research Reviews & Summaries
Local Economics

Trees in cities are not grown and managed for products that can be bought and sold on markets, but they do provide many intangible services and functions! This article serves two purposes. First, it introduces valuation methods that are used to convert intangible benefits to dollar sums. 1, 2

Then, it shows how nonmarket valuations can support local decision-making.

Fast Facts

- The presence of larger trees in yards and as street trees can add from 3% to 15% to home values throughout neighborhoods.
- Averaging the market effect of street trees on all house values across Portland, Oregon yields a total value of $1.35 billion, potentially increasing annual property tax revenues $15.3 million. 3
- A study found 7% higher rental rates for commercial offices having high quality landscapes. 4
- Shoppers claim that they will spend 9% to 12% more for goods and services in central business districts having high quality tree canopy. 4
- Shoppers indicate that they will travel greater distance and a longer time to visit a district having high quality trees, and spend more time there once they arrive. 4
Green Cities: Good Health > 4,500 peer reviewed publications
Urban Trees, Green Spaces
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Examples of the evidence

What is trending in the research?
Nearby Nature = Health Social Determinant

Nearby Nature includes a variety of spaces and places:

- Urban Forest Canopy
- Biophilic Design
- Parks and Gardens
- Green Stormwater Infrastructure
Green Space Access

46 peer reviewed articles

Promote Physical Activity
parks, natural areas and streetscapes
Perceived Neighborhood Environment and Physical Activity
The International Physical Activity and Environment Network Adult Study in Mexico

Alejandra Jáuregui, MSc,1 Michael Pratt, MD, MSPE, MPH,2 Héctor Lamadrid-Figueroa, PhD,3 Bernardo Hernández, DSc,4 Juan A. Rivera, PhD,1 Deborah Salvo, PhD1,5

Introduction: There is compelling evidence linking physical activity with environmental characteristics in high-income countries, but evidence among low- and middle-income countries is scarce and results are inconsistent. This study assessed associations between perceived measures of the built environment and objectively measured physical activity among Mexican adults.
Improve Air Quality
reducing particulates and noxious gases
(concerns about tree pollen)
Heat Vulnerability
thermal comfort, shade & cooling as refuge

CORE BODY TEMPERATURE

- 37°C (98.6°F)
- 38°C+ (100.4°F)
- 39°C+ (102.2°F)
- 42°C+ (107.6°F)
The Urban Tree as a Tool to Mitigate the Urban Heat Island in Mexico City: A Simple Phenomenological Model

Mónica Ballinas and Víctor L. Barradas*
Reduce Stress
 reducing fight or flight response
Improved Mental Health

reduced anxiety & depression, biodiversity benefit
Evidence of Health Risks & Nature-Based Solutions

- promote Physical Activity
- improve Air Quality
- reduce Heat Vulnerability
- reduce Stress
- improve Mental Health
Proportional mortality: % of all deaths, all ages, both sexes, 2014

- Diseases of the circulatory system: 25%
- Endocrine, nutritional and metabolic diseases: 17%
- Neoplasms: 13%
- External causes: 10%
- Diseases of the digestive system: 10%
- Diseases of the respiratory system: 9%
- Diseases of the genitourinary system: 3%
- Infectious and parasitic diseases: 3%
- Perinatal disorders: 2%
- Other causes: 6%
- Diseases of the nervous system: 2%

Environmental Equity & Inclusion
wellness & better health for all
Human Dimensions of Urban Forestry and Urban Greening

What's New?

Nature and Consumer Environments
Research about how the urban forest influences business district visitors.

Trees and Transportation
Studies on the value of having quality landscapes in urban roadsides.

Civic Ecology
Studies of human behaviors and benefits when people are active in the environment.

Policy and Planning
Integrating urban greening science with community change.

Urban Forestry and Human Benefits
More resources, studies and links . . .

Green Cities: Good Health
human health & well-being research

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