Mental Health & Wellness
Tree & Forest Therapy Solutions

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Chicago Region Trees Initiative
2019 Partner Recognition Celebration

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How are urban trees associated with human health?
Health is...

A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity

(World Health Organization, 1946)
Green Cities: Good Health

www.greenhealth.washington.edu

Sponsors:
USDA Forest Service,
(U&CF Program + Pacific NW Research)
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Thanks!
to U of WA students:
Katrina Flora
Mary Ann Rozance
Sarah Krueger

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. 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.9
- A study found 7% higher rental rates for commercial offices having high quality landscapes.14
- Shoppers claim that they will spend 9% to 12% more for goods and services in central business districts having high quality tree canopy.34
- 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.34
Literature review of research about nearby nature & human health
Urban Trees & Human Health: A Scoping Review

Purpose:
To carefully collect and synthesize the peer-reviewed evidence concerning urban trees and human health.
Method

Keyword search (n = 2563)

Abstract review (n = 436)

Quality assessment (n = 215)

Final article set (n = 199) (201 studies)

Synthesize and present findings
Associations between urban trees & health

Figure created by Sharon Lam
Health Care Spending in U.S.

- $10,739 annual per capita (2017)
- $3.5 trillion total
- 17.9% of Gross Domestic Product
Mental Health - Emergency Dept Visits

source: Healthcare Cost & Utilization Project
Data Story for Trees & Forests: Human Health Benefits Across the Life Cycle
Healthy Microbiome

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

Bloomfield et al. 2016
Perspectives in Public Health

need contact with ‘Old Friends”

put aside the
Hygiene
Hypothesis
intestinal microbiome development

Arrieta et al. 2014. Frontiers in Immunology
Eat Dirt!
Create Forests!
Classroom Views & Stress

Li & Sullivan. 2016. Landscape & Urban Planning
Classroom Views & Stress
high school student response

attention scores

stress scores
ADHD and nature contact

• 17 children aged 7-12 with diagnosed ADHD
• 20-minute guided walks
  • Park
  • Neighborhood
  • Downtown
• Pre-walk puzzles
• Post-walk cognitive tests
Japanese Version Click Here

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physically disabled & tree climbing!
recreational tree climbing – youth therapy
Green High School Campuses

• cafeteria & classroom window views with greater quantities of trees and shrubs

• positively associated with:
  • standardized test scores,
  • graduation rates
  • %s of students planning to attend a four-year college
  • fewer occurrences of criminal behavior

Matsuoka. 2010. Landscape & Urban Planning

credit: NBC News
Attention Restoration Theory
Rachel & Stephen Kaplan, U of MI
busyness

multi-tasking

‘out of balance’
directed attention fatigue . . . .
Workplace Nature & Attention Recovery

- **Well-being**
  - desk workers without view of nature reported 23% more ailments in prior 6 months

- **Job Satisfaction**
  - less frustrated and more patient
  - higher overall job satisfaction and enthusiasm

ART Design Elements

• being away
• ‘soft’ fascination
• extent
• compatibility
Nature and Creativity

http://www.jimkukral.com/
nature and creativity

http://daycare.sulekha.com
Give Your Ideas Some Legs

creative test – analogy generation
conditions: sit inside, treadmill walk, walk outside, wheelchair outside

walking outside produced most novel & highest quality analogies – walking opens up free flow of ideas

Oppezzo & Schwartz. 2014. Journal of Experimental Psychology
Nature & Creative Professionals

focused interviews, Denmark
makes us more curious
supports flexible thinking
recharges directed-attention

aids 2 phases of the creative process:
Preparation phase and Incubation phase

sensory dimensions: space & serene

Plambech & Konijnendijk van den Bosch.
2015. Urban Forestry & Urban Greening

www.concur.com
Physical Activity & Depression Reduction

• Review of 13 high quality studies
  • exercise recommended for mild to moderate depression
  • associated meditation and mindfulness are important

Improving Depression

20 adults with major depression walk in a park setting and a built setting

- 50-minute walks one week apart
- before-after testing:
  - Mood: Positive and Negative Affect (PANAS)
  - Cognition: Backward Digit Span (BDS)

cognitive and affective improvements after walking in a nature setting

Berman et al. 2012. *Journal of Affective Disorders*
Effects of nature window view on recovery from surgery (Roger Ulrich, 1984)

- Shorter stays
- Less pain
- Fewer minor complications
- Better emotional well-being
Legacy Good Samaritan Medical Center
Stenzel Healing Garden 1997
Rehabilitation Institute of Oregon
Hospital Staff – Respite and Support

image credits: Teresia Hazen
Nature: A stress coping resource for employees 24-7

Impact of Nurses Taking Daily Work Breaks in a Hospital Garden on Burnout

American Journal of Critical Care 2018

image credits: Teresia Hazen
Alzheimer’s Disease & Dementia
Provide wander gardens & horticulture therapy

• 10.5% reduction in amount of medications used in dementia facility
• 30% fewer falls, also reductions in fall severity

Detweiler et al. 2009. American Journal of Alzheimer’s Disease and Other Dementias

Tim Lynch Associates
www.rph.org/eden.html
Tree cover shows an inverse relationship with depressive symptoms in elderly residents living in U.S. nursing homes

Matthew H.E.M. Browning, Kangjae Lee, Kathleen L. Wolf
Data Story for Trees & Forests: Human Health Benefits Across the Life Cycle
City Trees & Mental Health

- Literature Review
- Therapies & Treatments

- General Wellness
Urban Trees & Green Space for Mental Health

general wellness:
school performance
stress reduction
attention restoration
creativity
job burnout prevention

therapy:
attention deficit
emotional therapy
depression reduction
dementia & cognitive disorders
special situations
General Wellness

Therapy & Treatment

credit: UK National Health Service

credit: marieclaire.org
Tree Planting for Health & Climate
‘general wellness’ strategies

Views from Within

Create Refuge

The medicine of being in the forest
We are the leading global voice for forest bathing and forest therapy

Santa Rosa, California
Experience the restorative powers of nature and join us for Strolls for Well-Being, a free 10-week program offered at Bloedel Reserve. If not already a member, participants are given a temporary membership to

**DAY-USE STROLLS:**
Since introducing the Strolls for Well-Being program in 2014, hundreds of people have benefited from the healing effects of nature.
Human Dimensions of Urban Forestry and Urban Greening

featuring research on peoples’ perceptions and behaviors regarding nature in cities

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

Projects Director
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