From Science to Action: Evidence Based Programs for Nature and Health in Communities

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Understanding Urban and Community Forests
An Extension Webinar Series
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Outline

1. Health & Nature: the evidence, a review

2. Key Studies

3. Program Ideas
WHO Health Definition

A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity (1946)
Social Determinants
Green Cities: Good Health
www.greenhealth.washington.edu

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

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.
- A study found 7% higher rental rates for commercial offices having high quality landscapes.
- Shoppers claim that they will spend 9% to 12% more for goods and services in central business districts having high quality tree canopy.
- 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.
Outside Our Doors

The benefits of cities where people and nature thrive.

design: milepost

co-author: US Forest Service

co-author & printing: The Nature Conservancy
Introduction

Writers, philosophers, and naturalists have praised the benefits of nature for human health, happiness, and well-being for centuries, but only relatively recently have researchers begun studying and quantifying the complex relationship between human health and nature.

In 1984, Roger Ulrich, professor and director of the Center for Health Systems and Design at Texas A&M University, published the results of a pioneering study that looked at the recovery rates of gall bladder surgery patients in relation to the views from their rooms in a Texas hospital. Some of the patients looked out over a garden and grove of trees, while others had a view of a brick wall. Ulrich found that patients with a natural view spent fewer days in the hospital and used fewer pain medications (Ulrich 1984).

Ulrich’s study helped open the door to a new field of inquiry focused on illuminating the ways that nature influences our physical, mental, and social lives. More than three decades later, a broad and diverse body of scientific literature describes the human health value of nature, confirming that trees, parks, gardens, and other natural settings are as essential to livable and sustainable cities as the other critical systems that keep their residents moving and working.

Findings from the current literature indicate the wide range of effects.

Contents

1 Introduction
2 Defining Nature and Health Research
3 Pollution and Physical Health
4 Active Living
5 Features that Promote Physical Activity
6 Mental Health
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also in Spanish! and Arabic!
Outline

1. Health & Nature: the evidence, a review
2. Key Studies
3. Program Ideas
The Children & Nature Network is a leading organization in the movement to connect all children, their families, and their communities to nature through innovative ideas, evidence-based resources and tools, broad-based collaboration, and support of grassroots leadership. C&NN works with NAAEE on programmatic initiatives related to early childhood education the No Child Left Inside Act and its associated parts.
Fiddleheads Forest School
Washington Park Arboretum (Seattle)
cognitive
social & physical learning
CDC moderate activity recommendations

parks, active living, active transit
Walking Programs

children
elders
families
Parks Prescription

Date: _________________________
Dr: _________________________
Name: _________________________

I recommend:
☑ Walking
☐ Other: _________________________

____________________ minutes a day

____________________ days per week

* Health Canada suggests moderate activity of 30 minutes per day 5 days a week

Benefits of daily activity

• Improve overall physical and mental health
• Maintain a healthy weight
• Reduce the risk of diabetes and other chronic conditions
• Lower cholesterol levels
• Manage stress and anxiety

Signature: _________________________
Parks Prescription

1. Get a prescription for ParksRx from your healthcare provider.
2. Visit www.REACHforbetterhealth.com
   2.1. Enter your zip code
   2.2. Click
3. Pick your park
4. Exercise in the park and share outcomes with your healthcare provider.

PARKS RX
Your Prescription For Better Health

www.REACHforbetterhealth.com/ParksRx
Made possible with funding from the Centers for Disease Control and Prevention.
Shinrin yoku (forest bathing)

- extensive research
- restorative experiences
- workers retirees
- networked system, 52 bases in Japan
The medicine of being in the forest
We are the leading global voice for forest bathing and forest therapy

Santa Rosa, California
Green Streets for Walkability

evidence of lower frustration and higher meditation when moving into the greener streets

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)

Berman et al. 2012. *Journal of Affective Disorders*

cognitive and affective improvements after walking in a nature setting
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.
Mindfulness/Meditation Training

- healthy workplace employees
- 8 week mindfulness training

Results

- brain electrical activity – positive affect
- brain activation – reduced stress event response
- more antibodies after influenza vaccine = better immune function

Davidson et al. 2003. Alterations in Brain and Immune Function Produced by Mindfulness Meditation. Psychosomatic Medicine
Nature and Mindfulness

focus
soft fascination
undirected attention

Attention Restoration Theory, Kapan & Kaplan

credit: Michael Hellgren
Nature and Creativity

http://www.jimkukral.com/
role of nature in creativity development

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
Walking Meetings

creativity, energy, communication, health
Veterans Outdoor Therapy

Les Winkeler/The Southern Illinoisan

World-Herald News Service

Hope for the Warriors

Outward Bound
Military Service & Health Impacts

- military service to civilian transition
- prevalence of Stress Response
- service carry-overs
  - Social cohesion/comraderie
  - Purpose/mission oriented
  - High commitment & exertion
  - Advanced skill sets

credit: NPR.ORG
community tree plantings

American Forests

Tree People, Los Angeles

parks
public gardens
street trees
neighborhood
Prison Inmates :: nature videos

solitary confinement, video room/exercise option


- felt significantly calmer, less irritable, more empathetic
- committed 26% fewer violent infractions
The Sustainability in Prisons Project
An Overview (2004–12)

- offenders
- facilities
- materials for ecological restoration

sustainabilityinprisons.org
Summary: Knowledge to Practice

• nearly 40 years of research
• critical mass of evidence – action!
• greening and health programming
• more opportunities for collaboration & partnership
http://actrees.org/files/What_We_Do/OutreachStrategies.pdf