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ECHO Idaho: Behavioral Health in Primary Care

Nature as Medicine

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The speaker has no significant financial conflicts of interest to disclose.

Learning Objectives

- Review current evidence on nature as medical treatment for mental health disorders
- Provide tools for incorporating nature prescriptions into practice
- Get us excited to get outside!

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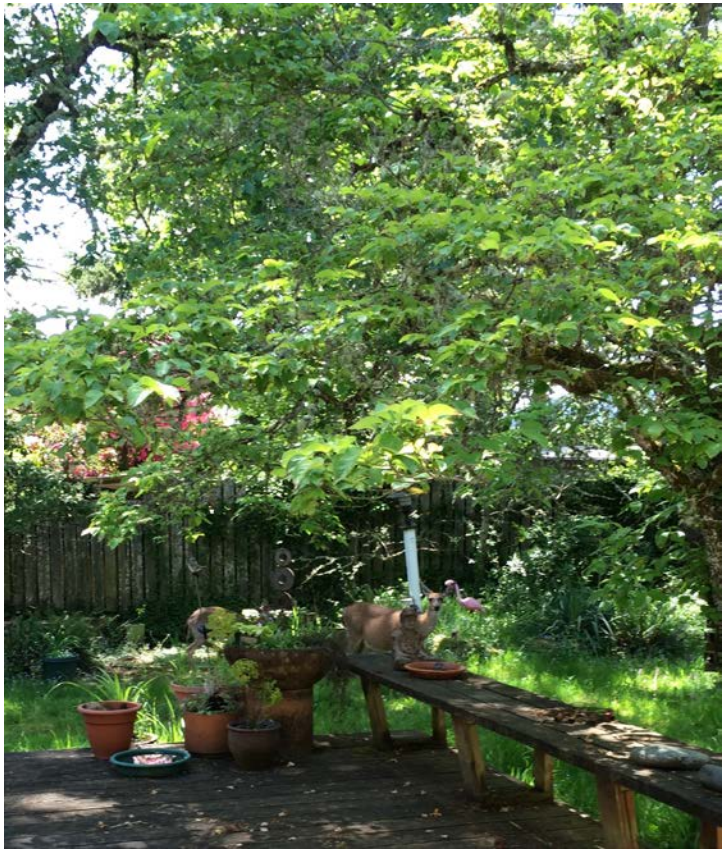
Nature as medicine

- Growing body of research, though not a new thought
  - Hippocrates: walking as “man’s best medicine”
  - TB treatment 1940s “Mountain airs”
  - Han Dynasty “frolicking exercise”
- Newer developments:
  - Attempts to create an evidence base and way to study effects
  - Nature, green spaces as treatment for physical and mental disorders on individual and population level

Study: Greening vacant lots



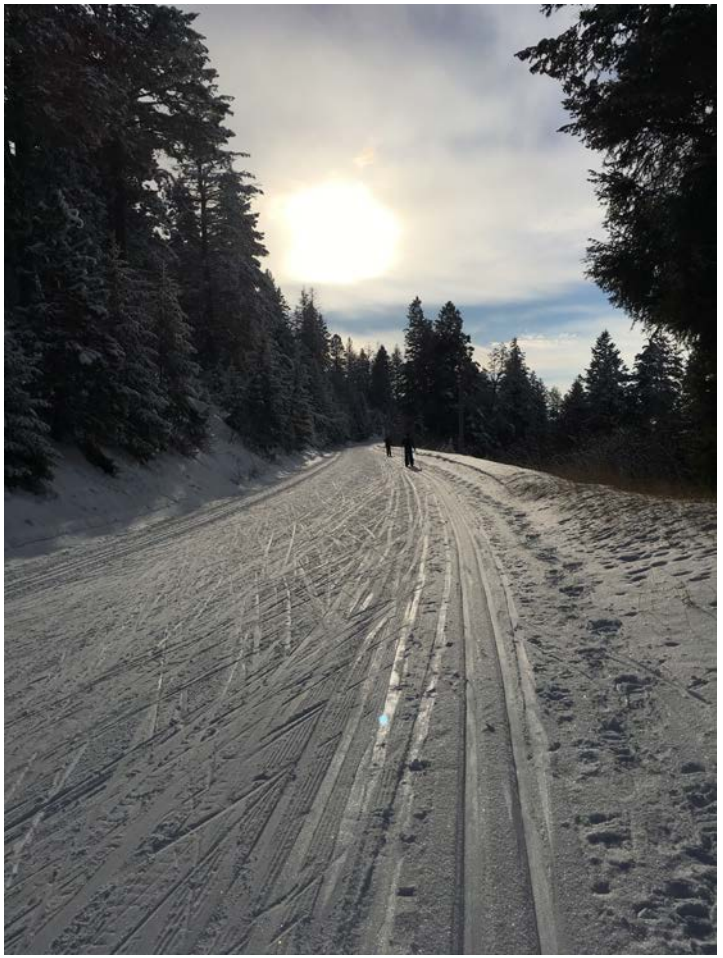
- Randomized trial evaluating effect of “greening” vacant lots in an urban setting
- Urban setting (Philadelphia): randomized lots to nothing, clean up vs “greening” (planting simple garden with surrounding fence)
- 442 participants, three groups based on proximity to lots
- Kessler-6 Psychological Distress Scale both prior to the interventions and 18 months afterward
- Greening intervention group had significant reductions in feeling depressed or worthless
- Larger effect in poorer areas

Study: Salivary biomarkers

- 8 week study
- 36 urban dwellers
- Nature experience (defined as “spending time in an outdoor space that brings a sense of contact with nature”) 3 times per week for 10 min or more.
- Goal was to attempt to define a “nature pill”
- Salivary samples before and after a NE, correcting for normal diurnal fluctuations in stress indicators
- Salivary Cortisol: 21.3 %/hour drop beyond 11.7% diurnal drop. Activity type did not influence cortisol response and greatest efficiency was within 20-30 min of exposure
- Salivary alpha- amylase, there was a 28.1%/h drop after adjusting for its diurnal rise of 3.5%/h, but only for participants that were least active sitting or sitting with some walking.

Dose dependence—120 mins

- Study out of England looking at the relationship between nature exposure and self reported subjective well-being and self reported health
- 19, 806 participants
- Controlled for casual contact (residential greenspace)
- No nature vs 120 minutes became statistically significant
- Peak at 200-300 min with no further gain
- Nature exposure defined as: time spent in open spaces in and around towns and cities, including parks, canals and nature areas; the coast and beaches; and the countryside including farmland, woodland, hills and rivers



Park Rx

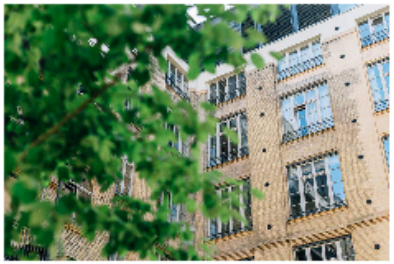
- RESOURCE PLUG:
- Park Rx: non-profit organization
- Mission: “to decrease the burden of chronic disease, increase health and happiness, and foster environmental stewardship, by virtue of prescribing Nature during the routine delivery of healthcare by a diverse group of health care professionals.”
- www.parkrxamerica.org

Park Rx America

SCIENTIFIC RESEARCH

BRAIN HEALTH

Park Rx America is a 501(c)(3) non-profit charitable organization.



Moving from urban to greener areas was linked to improved mental health.

"On moving from urban to greener areas: "mental health improved within a year and stayed approximately the same for the following two years."

Alcock I., White MP., Wheeler BW., Fleming LE., Depledge MH. Longitudinal Effects on Mental Health of Moving to Greener and Less Green Urban Areas. Environmental Science & Technology 1247-1255.

Longer distances to green areas are associated with higher levels of stress.

"A stronger positive correlation between stress and distances to green areas is found when the distance is measured within the largest cities."

Study measured amount of stress and BMI in relation to green space

Nielsen TS, Hansen KB. (2007). Do green areas affect health? Results from a Danish survey on the use of green areas and health indicators. Health and Place, 13(4):839-50.

Nature helps to lessen to the negative impact of stressful life events.

"As shown in Figure 1, stressful life events have less impact on psychological distress under high nature conditions than under low nature conditions."

Wells, N. M., & Evans, G. W. (2003). Nearby Nature A Buffer of Life Stress among Rural Children. Environment & Behavior, 35(3). http://dx.doi.org/10.1177/0013916503035003001

Green spaces are restorative and boost attention, while viewing concrete worsens attention during tasks.

"The green roof scene was perceived by participants as more restorative, as well as boosting their attention compared to participants viewing the concrete scene, who showed worsening attention over the course of the task."

Study had participants look at nature for 40 seconds and attention boosts were measured

Lee, K. E., Williams, K. J.H., Sargent, L. D., Williams, N. S.G., & Johnson, K. A. (2015). 40-second green roof views sustain attention: The role of micro-breaks in attention restoration. Journal of Environmental Psychology, 42, 182-189. http://dx.doi.org/10.1016/j.jenvp.2015.04.003

Group walks in nature are significantly associated with lower levels of depression.

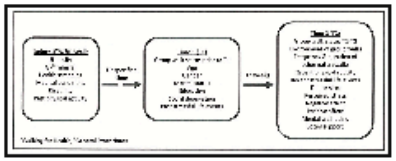
"Controlling for other significant predictors, group walks in nature were significantly associated with lower depression."

Marselle Melissa R., Irvine Katherine N., and Warber Sara L. Examining Group Walks in Nature and Multiple Aspects of Well-Being: A Large-Scale Study. Ecopsychology. September 2014 DOI: 10.1089/eco.2014.0027

Group walks in nature are associated with lower levels of stress and negative affect.

"Group walks in nature were significantly associated with less perceived stress and less negative affect."

Marselle Melissa R., Irvine Katherine N., and Warber Sara L. Examining Group Walks in Nature and Multiple Aspects of Well-Being: A Large-Scale Study. Ecopsychology. September 2014 DOI: 10.1089/eco.2014.0027



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Walking in urban vs rural setting

- 708 individuals
- Cross-sectional study of individuals who already walked regularly
- Surveyed on mental well-being, depression, perceived stress and emotional well-being
- Compared group walks in urban vs. rural settings
- Less stress, greater sense of well-being if walks took place in rural setting (farmland)
- Opportunity/focus for “green prescriptions”

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Children and Nature

- RESOURCE PLUG:
  - Children and Nature Network
    - www.childrenandnature.org
    - Research library on effects of nature on children
    - Promoting nature engagement and equitable access to nature through promotion of evidence based materials and advocacy

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children & nature network

GREEN SCHOOLYARDS CAN PROVIDE MENTAL HEALTH BENEFITS

THE ISSUE

1 in 5 children has, or has had, a serious mental health disorder at some point in their lives.[1]

MENTAL HEALTH PLAYS A CRITICAL ROLE IN THE COGNITIVE, EMOTIONAL, & SOCIAL DEVELOPMENT OF CHILDREN AND YOUTH.

Green schoolyards can enhance mental health and well-being and promote social-emotional skill development.

GREEN SCHOOLYARDS HELP KIDS FEEL:

CALMER & LESS STRESSED[2,3]
Views of green landscapes from classroom windows helped high school students recover more quickly from stressful events.[4]

POSITIVE & RESTORED[3]
Forest schools enhanced positive and decreased negative emotions.[5]

RESILIENT[2]
Natural areas enhanced feelings of competence and increased supportive social relationships that help build resilience.[2]

GREEN SCHOOLYARDS PROMOTE SOCIAL-EMOTIONAL SKILLS

PRACTICE

RELATIONSHIP SKILLS[2]
Children demonstrated more cooperative play, civil behavior and positive social relationships in green schoolyards.[6,7]

DEVELOP

SELF-AWARENESS & SELF-MANAGEMENT

Green schoolyards can reduce aggression and discipline problems.[6,7]

Gardening at school helped students feel proud, responsible & confident.[2]

SUPPORTING RESEARCH

[1]www.nimh.nih.gov/health/statistics/prevalence/any-disorder-among-children.shtml [2]Chawla et al. (2014). Green schoolyards as havens from stress and resources for resilience in childhood and adolescence. *Health Place*, 28, 1-13. [3]Kelz et al. (2015). The restorative effects of redesigning the schoolyard: A multi-methodological, quasi-experimental study in rural Austrian middle schools. *Environ Behav*, 47(2), 119-139. [4]Li & Sullivan (2016). Impact of views to school landscapes on recovery from stress and mental fatigue. *Landscape Urban Plan*, 148, 149-158. [5]Roe & Aspinall (2011). The restorative outcomes of forest school and conventional school in young people with good and poor behaviour. *Urban For Urban Gree*, 10(3), 205-212. [6]Bell & Dyment (2008). Grounds for health: The intersection of green school grounds and health-promoting schools. *Environ Educ Res*, 14(1), 77-90. [7]Nedovic & Morrissey (2013). Calm, active and focused: Children's responses to an organic outdoor learning environment. *Learn Environ Res*, 16(2), 281-295.

ADDITIONAL RESEARCH USED FOR THIS INFOGRAPHIC AVAILABLE AT childrenandnature.org/gsybibliographies

C&NN recognizes that not all studies support causal statements.

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Challenges/opportunities

- Increasing interest in medical community
- Endorsement by insurance
- Difficult to define/track and quantify
- Need for additional research on specific indications for defined disorders

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Key Points

- Currently there is enough evidence to start prescribing nature
- Some tools exist to help (But we need more from Idaho!)
- GET OUTSIDE AND HAVE SOME FUN! (Too much? A little manic?)

References

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- White, MP. Et al. Spending at least 120 minutes a week in nature is associated with good health and wellbeing. *Nature.com. Scientific reports. (*2019) 9:7730
- www.childrenandnature.org
- www.parkamerica.org

- Additional resources on request