Trees Forever: Our Woodland Legacy Symposium

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WHY INTEGRATIVE MEDICINE?
Why Integrative Medicine?

My inspiration
Gooseberry Falls, MN
2011
WHAT IS INTEGRATIVE MEDICINE?
What is Integrative Medicine?

Suzanne and Dr. Andrew Weil
Tucson, AZ
2012
THE ROLE OF NATURE
The Nature Factor

www.natureandforesttherapy.org/blog
NATURE RESEARCH
Health Outcomes Tied to Nature

- Depression/Anxiety
- Diabetes mellitus
- ADHD
- Cancer
- Infectious diseases
- Healing from surgery
- Obesity

- Birth outcomes
- Cardiovascular disease
- Musculoskeletal complaints
- Migraine headache
- Respiratory conditions
Possible Mechanisms

- Air quality
- Physical activity
- Stress
- Social integration
Environmental Conditions

- Phytoncides
- Negative air ions
- Mycobacterium vaccae
- Environmental biodiversity/microbiome
- Sights and sounds
  - Window views
  - Sounds of nature
Physiological Effects

- **DHEA**
  - Cardioprotective, anti-obesity, anti-diabetic properties

- **Adiponectin**
  - Atherosclerosis prevention

- **Natural Killer (NK) Cells**
  - Protection against cancer, infection
Physiological Effects, continued

- Inflammatory cytokines
  - Contribute to diabetes, cardiovascular disease, depression
- Blood glucose
  - Diabetes leads to blindness, nerve damage, kidney failure
Psychological Effects

- Experiences of awe
- Enhanced vitality
- Restored attention
Behaviors and Conditions

- Physical activity
- Obesity
- Sleep
- Social ties
How is it all related?

- A Central Pathway: Promotion of Immune Functioning
  - Kuo, M., Frontiers in Psychology, Aug. 2015
How to determine central pathway?

- Three criteria:
  - Must account for the size of nature’s impacts on health
  - Should account for many, if not most, of the specific health outcomes tied to nature
  - Should subsume other pathways leading to improved health
IMPROVED IMMUNE FUNCTION MEETS ALL THREE CRITERIA
Criteria #1) Must address nature’s effect on health

- NK cell numbers rise by 50% after two 2 hour forest walks on consecutive days and remained higher for a month (Li, 2010)
- Inflammatory cytokines reduced by approximately 50% after time spent in forest (Mao, 2012)

- Urban walks do not have these effects!
Criteria #2) Must account for specific health outcomes tied to nature

- Immune function linked with 18 conditions:
  - Acute urinary tract infection
  - Anxiety disorder
  - ADHD
  - Birth outcomes
  - Cancer
  - Cardiovascular disease
  - Depression
  - Diabetes mellitus
  - Healing from surgery
  - Infections disease of the intestinal canal
  - Medically unexplained physical symptoms
  - Migraine headaches
  - Upper respiratory tract infections
  - Respiratory disease
  - Vertigo
Criteria #3) Must subsume other pathways between nature and health

- Enhanced immune function wholly or partially subsumes 11 other pathways
  - Adiponectin
  - Reduced air pollution
  - Awe
  - Normalized blood glucose
  - Reduced obesity
  - Physical activity
  - Phytonicdides
  - Improved sleep
  - Social ties
  - Relaxation and stress reduction
  - Reduced immediate and long-term stress
Criteria #3) Must subsume other pathways between nature and health, continued

- Indirect evidence suggests connection between 7 additional pathways and improved immune function:
  - Improved immune function in mice:
    - DHEA
    - Mycobacterium vaccae
    - Negative air ions
  - Studies indirectly linking nature effects to immune function:
    - Vitality
    - Visual and auditory stimuli
    - Environmental biodiversity (microbiome)
Conclusions

- The startling size and scope of nature’s impact on health is being studied.
- A large number of mechanisms have been shown to connect time in nature with improved health.
- Improved immune function is a plausible central pathway.
Conclusions

• Research speaks to the value of green spaces
• Physical activity is not consistently related
  ◦ Greenspace for walking and quiet contemplation as important as recreation areas
• Findings emphasize importance of trees, soil, moving water
Shinrin Yoku

Prairiewoods Retreat Center, Hiawatha
April, 2016
Shinrin Yoku

Prairiewoods Retreat Center, Hiawatha
July, 2016
Shinrin Yoku

Prairiewoods Retreat Center, Hiawatha
September, 2016
Shinrin Yoku

Prairiewoods Retreat Center, Hiawatha
November, 2016
Shinrin Yoku

Iowa DD Council’s “Make Your Mark” Self-advocacy Conference, Honey Creek Resort October, 2016
Iowa DD Council’s “Make Your Mark” Self-advocacy Conference, Honey Creek Resort
October, 2016
Meet Me at the Market

Bike with a Doc, May 2016
Meet Me at the Market

Walk with a Doc
July, 2016
Survivor to Thriver Program Hall-Perrine Cancer Center Mercy Medical Center

Survivor to Thriver, September, 2016
FUTURE DIRECTION
Future Direction:
Herbal Medicine
Foundations in Herbal Medicine
August, 2016

Suzanne with Dr. Tieraona Low Dog
Future Direction:

Shinrin Yoku
Prairiewoods
Franciscan Retreat Center

Friday, January 20
10-12:00

www.prairiewoods.org
Future Direction:

Fat Bike and Winter Wellness Workshop

February 3-5, 2017

Honey Creek Resort

New beginnings
September 24, 2016
Future Direction:

Survivor to Thriver Program

Contact:

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319-398-6737
Future Direction:

Meet Me at the Market

May through October
NewBo Market
Cedar Rapids

www.MeetMeCR.org
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