SOUTH CAROLINA DEPARTMENT OF HEALTH AND HUMAN SERVICES
Healthy Connections MEDICAID

Welcome to the October Monthly Call

QTIP

October 14, 2026

QTIP Reminders

- **QIDA Cycle 3 is due this week!**
  - Please contact Addy if you need assistance
- **QI Power Hour is NEXT Friday October 23rd**
  - We'll discuss the PDSA worksheet launched during the August Learning Collaborative and walkthrough important reminders on performing PDSA cycles.
- **Mental Health Calls resume November 17th**
  - Join our content expert Alexis Reamer, LPCS to discuss mental health stigma surrounding patient transitions from inpatient to primary care.
  - Send your questions to the Monthly Call Dropbox!



Welcome Dr. Sundermann DO,FACOI,DipABLM,FACLM

Dr. Melissa Sundermann is a double board-certified physician in Internal Medicine and Lifestyle Medicine with over 25 years of experience in medical practice. She has advanced training in Integrative Medicine from the University of Michigan and has completed a Professional Training Program in Mind-Body Medicine through the Center for Mind-Body Medicine. Dr. Sundermann believes in a holistic, patient-centered approach, empowering individuals to heal through self-care and the pillars of Lifestyle Medicine.



Growing Healthy: Nature as Medicine for Children and Adolescents: Harnessing the Outdoors to Support Physical, Mental, and Social Well-Being



Dr. Melissa Sundermann, DO, FACOI, DipABLM, FACLM
Medical Director, Lifestyle Medicine, Corewell Health



Simple, Powerful Therapy

- **NUTRITION**: Choose predominantly whole, plant-based foods that are fiber-filled, nutrient dense, health-promoting and disease-fighting
- **SLEEP:** Lack of, or poor-quality sleep can lead to a strained immune system. Identify and alter environmental habits that may hinder healthy sleep
- **EXERCISE:** Regular and consistent physical activity is an essential piece of an optimal health equation
- **SUBSTANCE USE:** The well-documented dangers of any addictive substance use can increase risk for many cancers and heart disease
- **STRESS MANAGEMENT:** Identify both positive and negative stress responses with coping mechanisms and reduction techniques for improved wellbeing
- **SOCIAL CONNECTION:** Being connected to others is essential to emotional resiliency and overall health


SEARCHING FOR EVIDENCE THAT
NATURE
IS MEDICINE
EVIDENCE EVERYWHERE
KEEP EXPLORING
FIELD NOTES
Sunlight
Fresh Air
Movement
Connection
Sleep
Purpose
PLANTS AS MEDICINE
THE HEALING FOREST
NATURAL PRESCRIPTIONS



“Unofficial 7TH Pillar of Lifestyle Medicine

DAILY EXPOSURE TO NATURE/FRESH AIR

Doctor Outdoors

Melissa Sundermann, DO, FACOI, DipABLM, FACLM

“Nature As Medicine”



Nature As Medicine Guest Speakers



How Much Time Do We Spent Outdoors?

The Average American spends 93% of their Indoors

87% of time is spent Inside Buildings

6% of time is spent Inside Automobiles

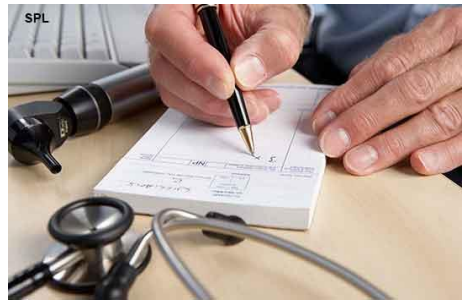
THIS IMPLIES ONLY 7% OF TIME IS SPENT OUTDOORS!

Klepeis, Nelson, Ott et al. The National Human Activity Pattern Survey, J Expo Sci Environ Epidemiol 11, 23-252 (2001)


Rx
Rx 1
YOU
TAK
TIME
AMO



WHY IS THIS MY FAVORITE PRESCRIPTION?



- **COST**



- **SIDE EFFECTS**



- **DURATION**

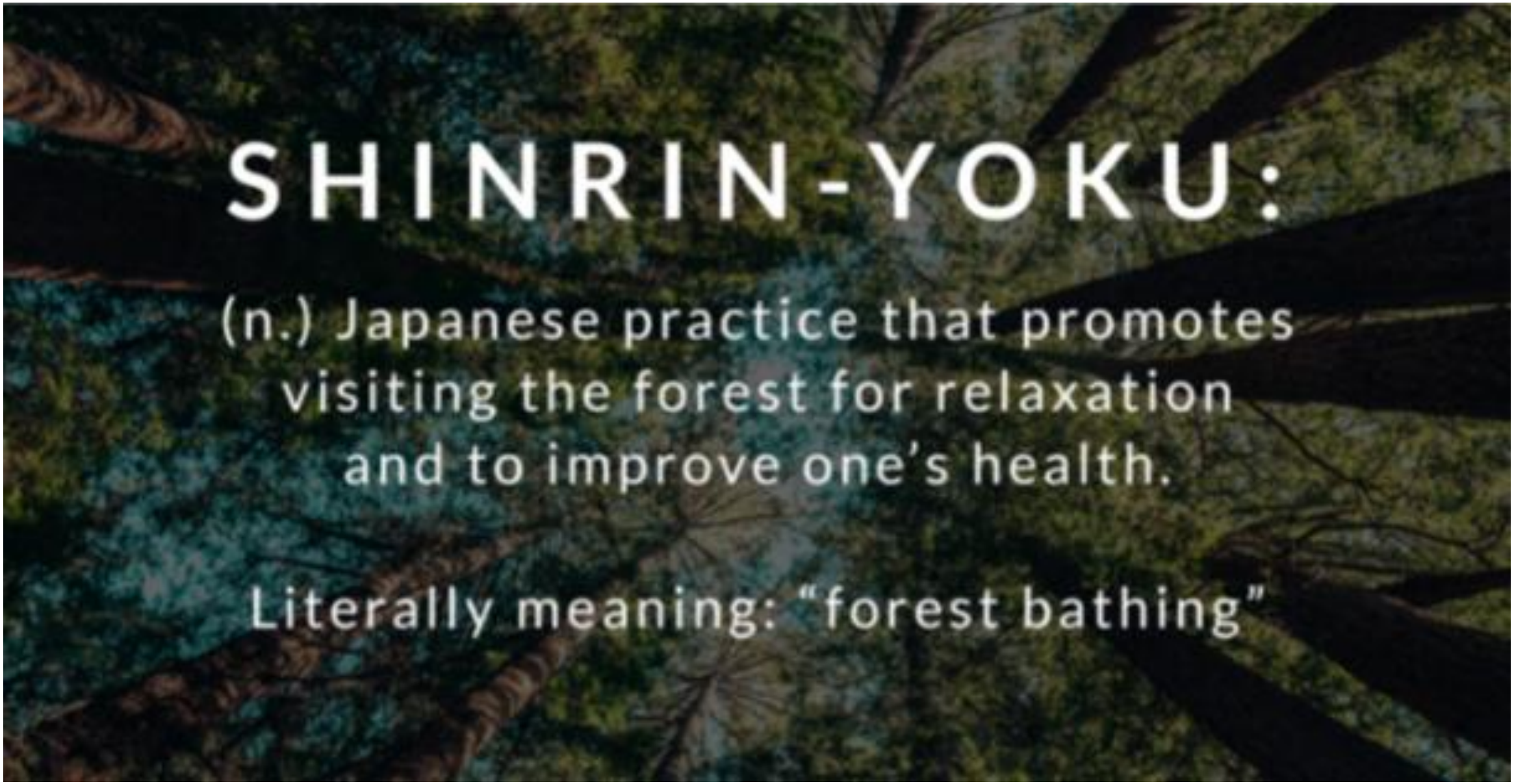


Before I understood the science…
I lived the instinct.








SHINRIN-YOKU:
(n.) Japanese practice that promotes visiting the forest for relaxation and to improve one's health.
Literally meaning: "forest bathing"

Research work of Dr. Qing Li: Relationship between Shinrin-Yoku and Immune Function

- It is well known that the Immune System including Natural Killer(NK) cells plays a vital role in the Defense against Bacteria, Viruses and Tumors
- Already has been shown that Stress Inhibits Immune Function
- ?? Could Forest Environment (Shinrin-Yoku/Forest Bathing) Reduce Stress
- Dr. Qing Li speculated that Forest Environment (Shinrin-Yoku) may have a Beneficial Effect on Immune Function by Reducing Stress

1st Forest Bathing Study in Japan/World

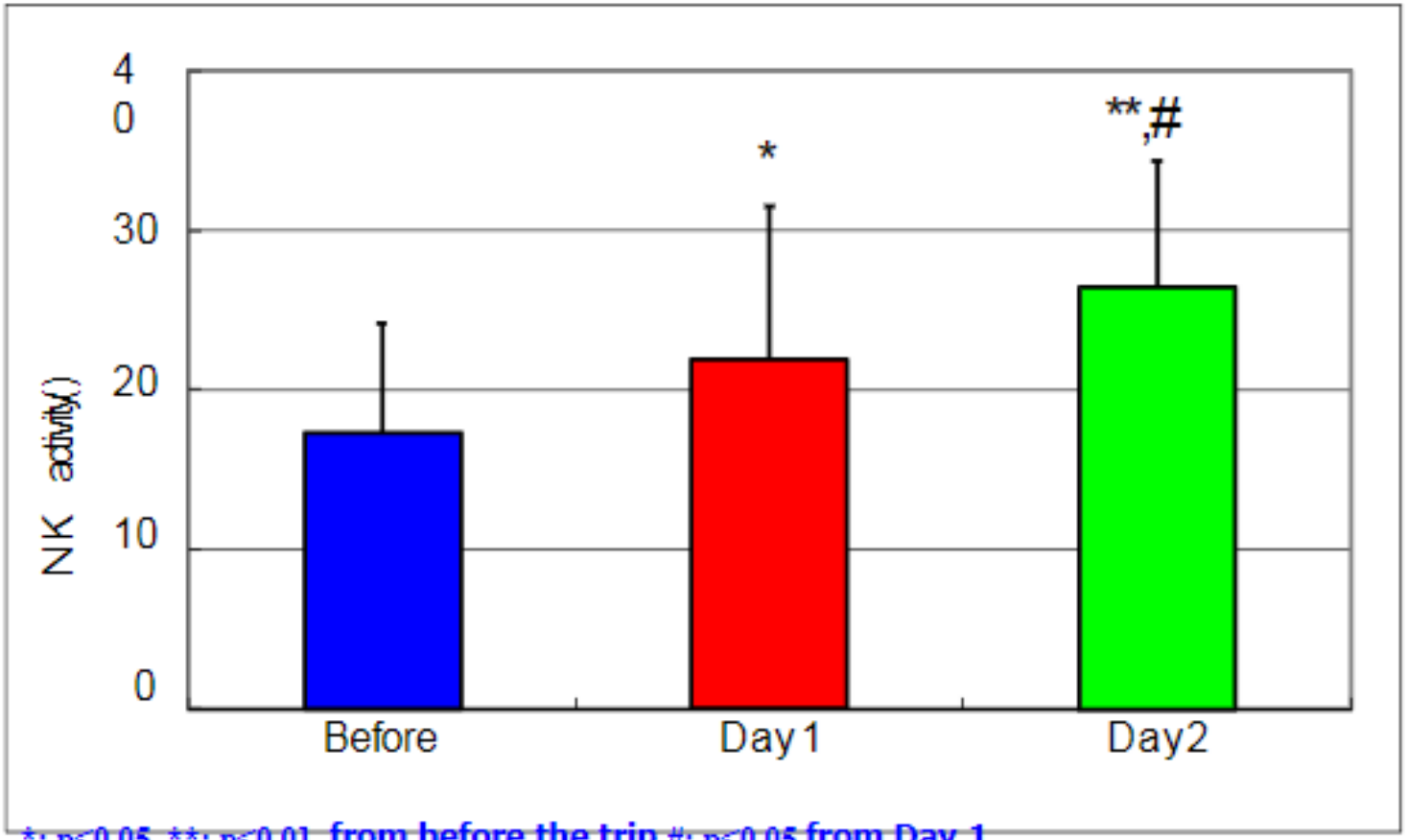


►2005, Dr. Quin Li, Iiyama City, Ngano

►Li Q er al. Forest enhances human natural killer activity and expression of anti-cancer patients, Int J Immunopathol Pharmacol. 2007; 20(2):3-8

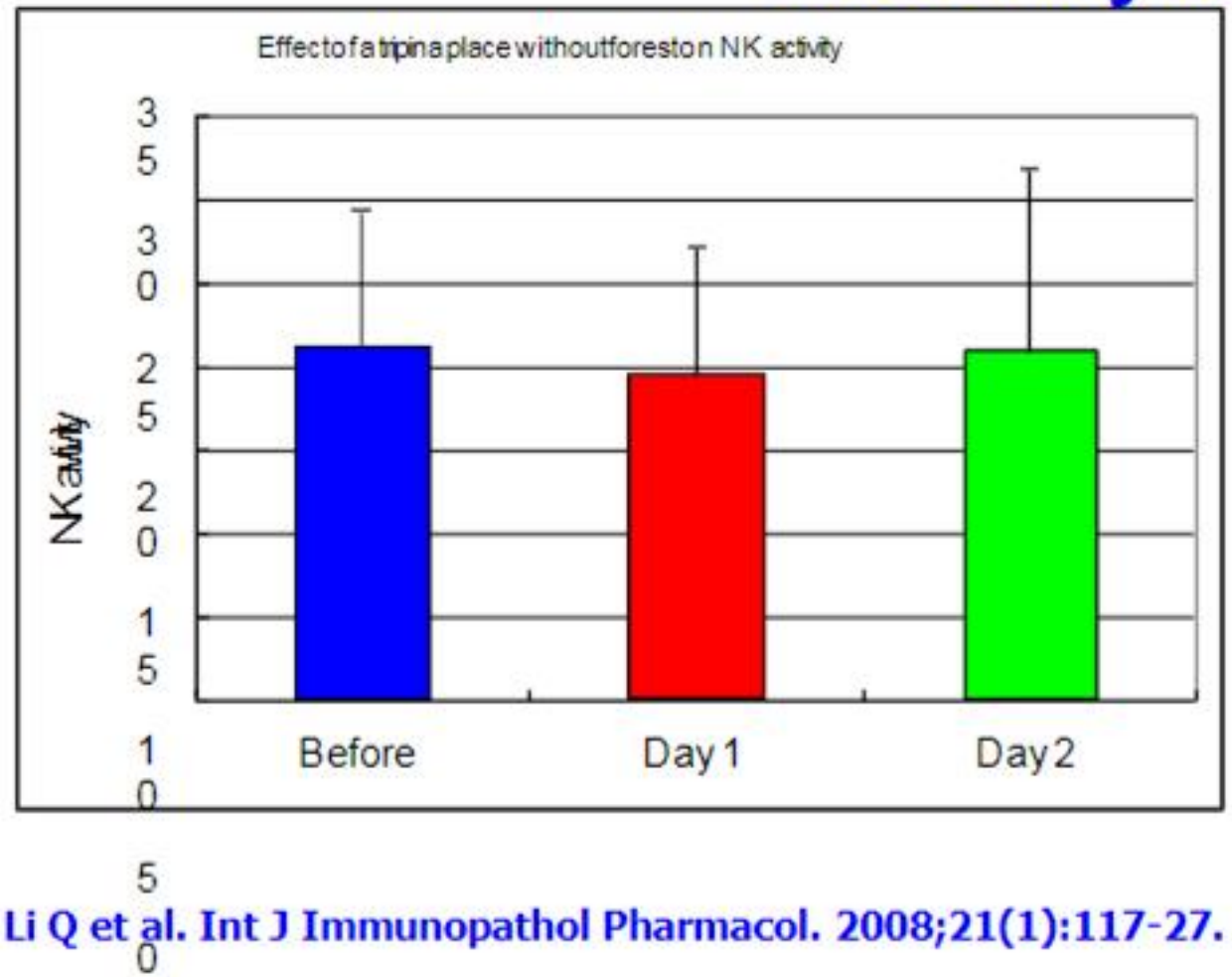
►Subjects taken to Forest for 2 Days

Shinrin-yoku significantly enhances human NK activity in males



*: p<0.05, **: p<0.01, from before the trip #: p<0.05 from Day 1

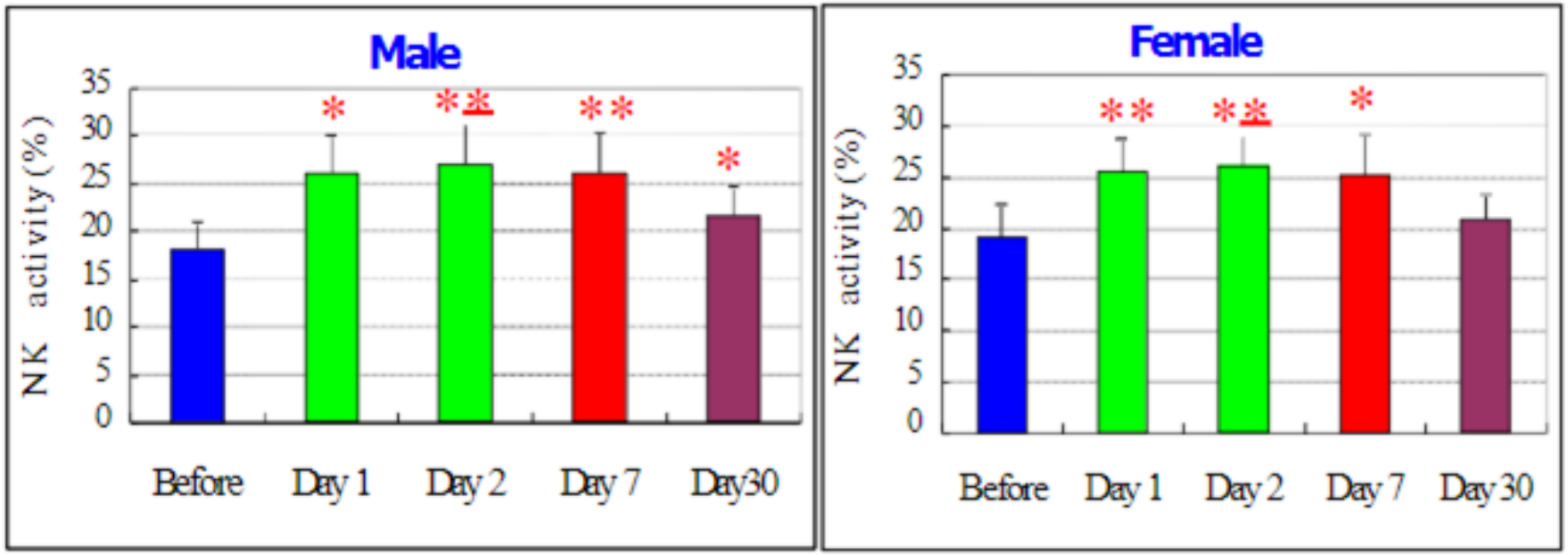
A trip to a place without forest does not enhance human NK activity in males



Li Q et al. Int J Immunopathol Pharmacol. 2008;21(1):117-27.



Shinrin-yoku increased NK activity and this effect lasted for 30 days in both males and females



*: p<0.05, **: p<0.01, from before the trip

Li Q et al. Int J Immunopathol Pharmacol. 2008;21(1):117-27.
Li Q. et al. J Biol Regul Homeost Agents 2008;22(1):45-55.

Environ Health Prev Med (2010) 15:18–26
DOI 10.1007/s12199-009-0086-9

SPECIAL FEATURE

The Trends on the Research of Forest Bathing in Japan, Korea and in the World

The physiological effects of *Shinrin-yoku* (taking in the forest atmosphere or forest bathing): evidence from field experiments in 24 forests across Japan

Bum Jin Park · Yuko Tsunetsugu · Tamami Kasetani · Takahide Kagawa · Yoshifumi Miyazaki

Received: 18 July 2008 / Accepted: 6 April 2009 / Published online: 2 May 2009
© The Japanese Society for Hygiene 2009

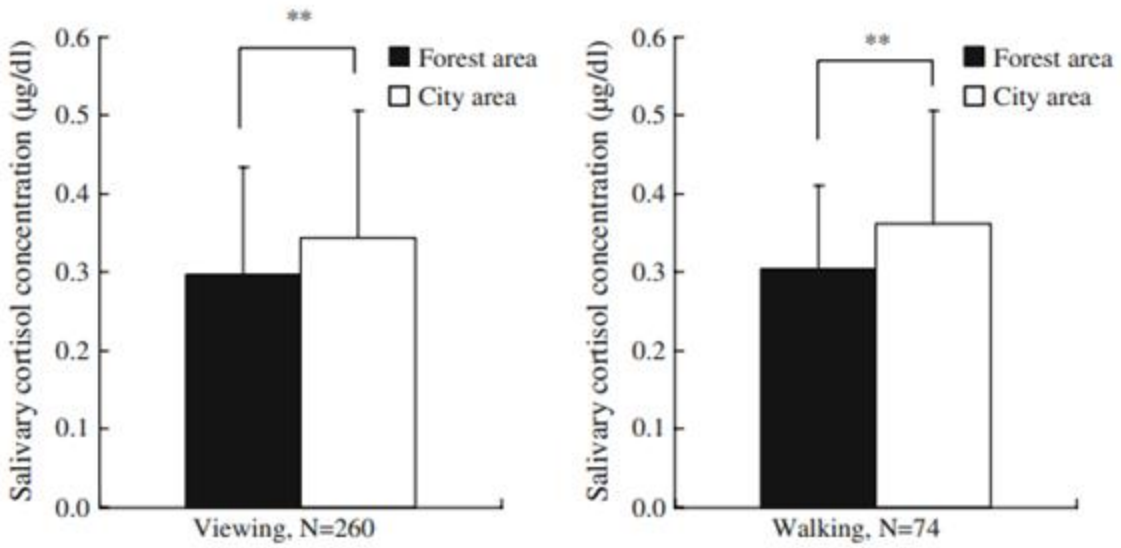
Abstract This paper reviews previous research on the physiological effects of *Shinrin-yoku* (taking in the forest parasympathetic nerve activity, and lower sympathetic nerve activity than do city environments. These results will con-





- Field Experiments 24 Forests Across Japan
- Each Experiment 12 Subjects (280 Total)
- 1st Day: 6 Subjects in Forest, 6 Subjects in Urban
- Sat for 15min, Walked for 15min
- 2nd Day: Crossover, Each group sent to different environment
- Measured: Salivary Cortisol, Blood Pressure, Pulse Rate

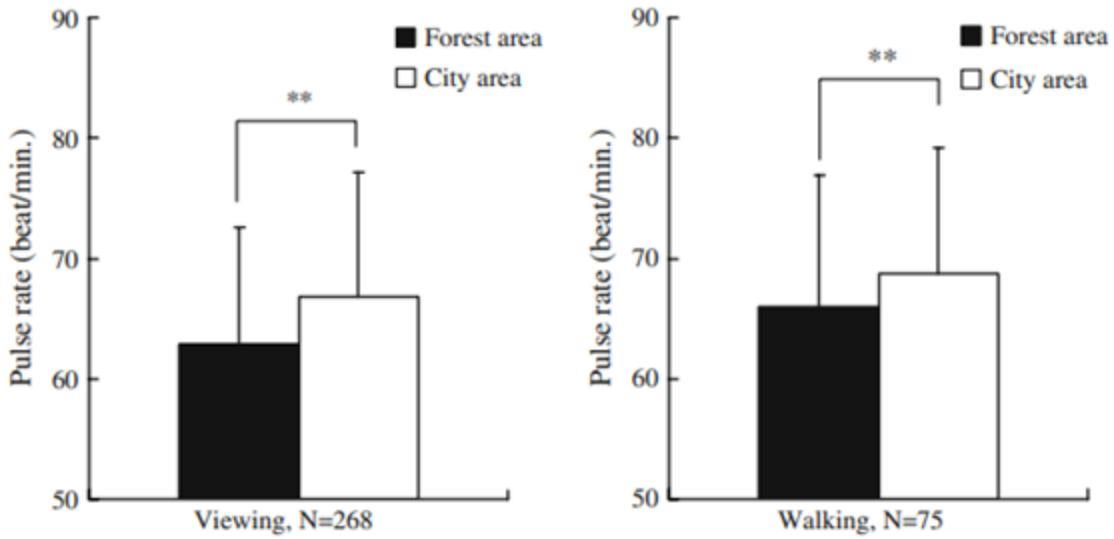
Fig. 2 Change in salivary cortisol concentration after forest viewing and walking. Mean ± standard deviation (SD); ** $p < 0.01$; p-value by t test



Springer

Change in Salivary Cortisol

Fig. 3 Change in pulse rate after forest viewing and walking. Mean ± SD; ** $p < 0.01$; p value by t test



CHANGE IN PULSE RATE

Fig. 4 Change in systolic blood pressure after forest viewing and walking. Mean ± SD; ** $p < 0.01$; * $p < 0.05$; p value by t test

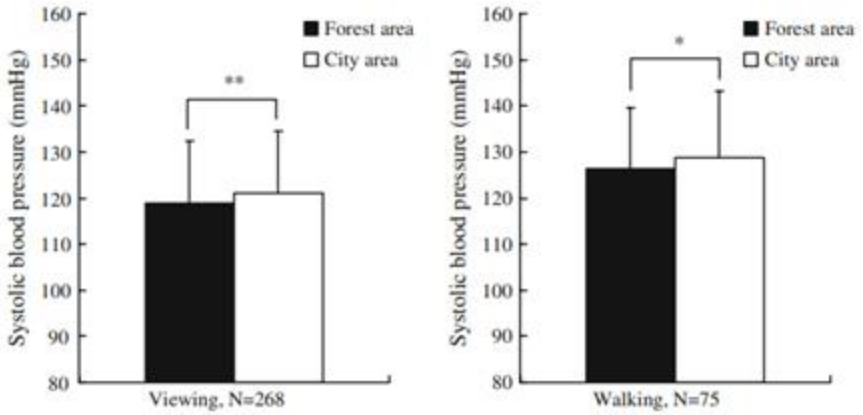
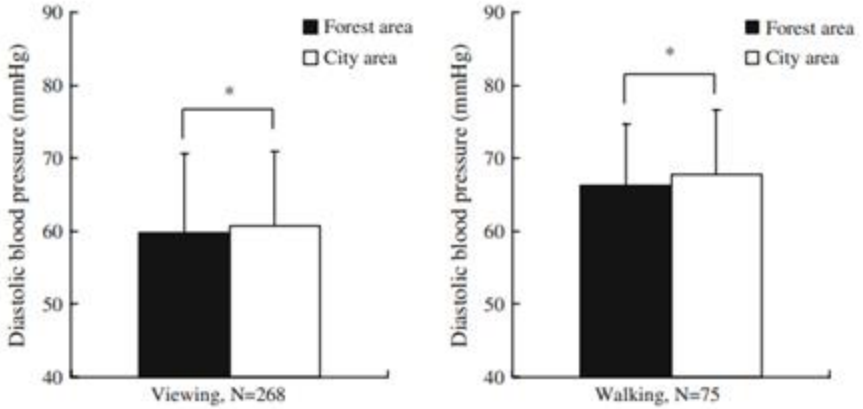
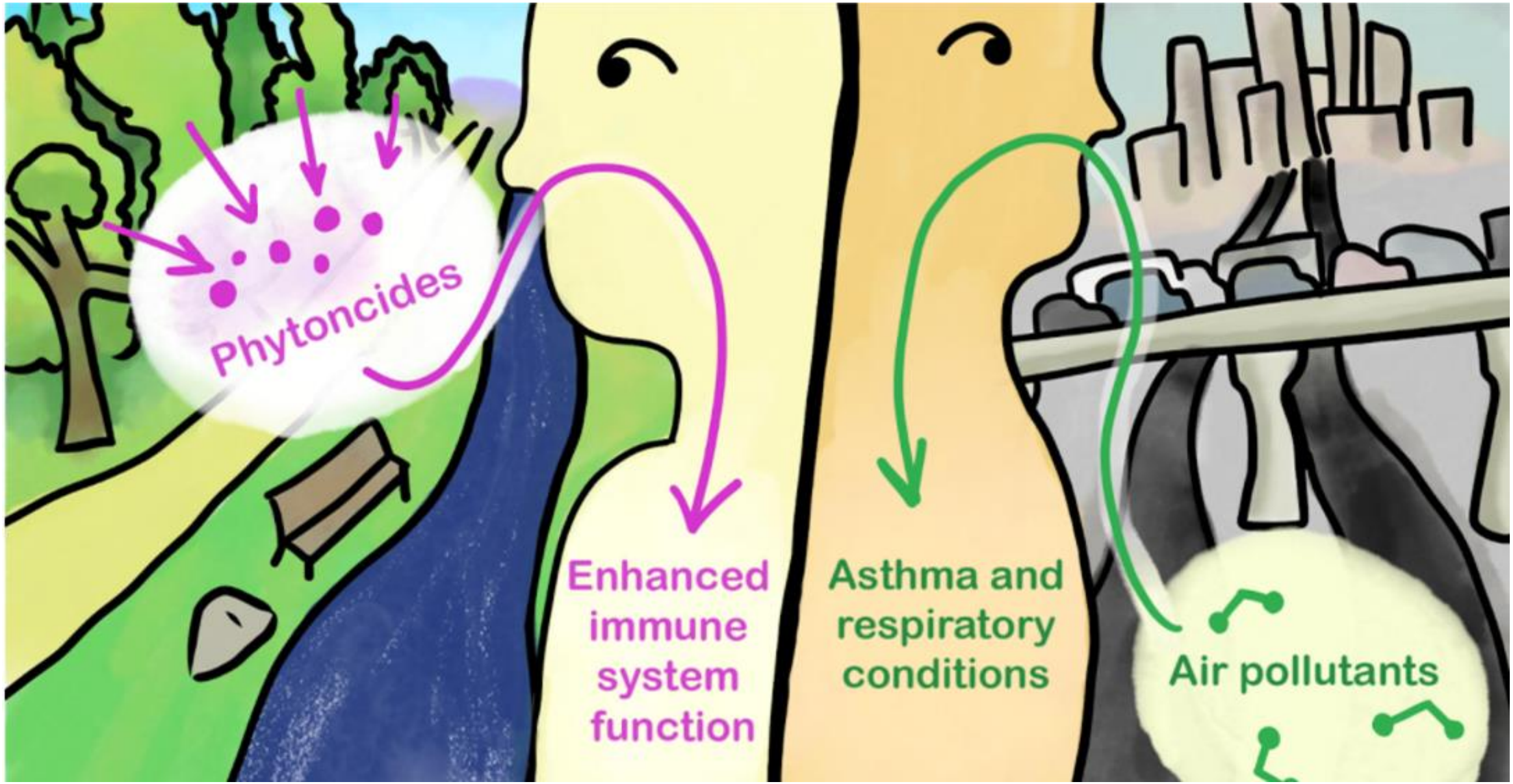


Fig. 5 Change in diastolic blood pressure after forest viewing and walking. Mean ± SD; * $p < 0.05$; p value by t test



CHANGES IN BLOOD PRESSURE


Plant meaning
Phyton
+
Sterilizing power
meaning
Cide
=
Phytoncide


Phytoncides
Enhanced immune system function
Asthma and respiratory conditions
Air pollutants



Dr. Li wanted to further test exposure to Phytoncides

12 Subjects “locked” in Hotel Rooms for 3 Nights

Some Rooms were “rigged” with a Humidifier to Vaporize Stem Oil from Hinocki Cypress Tress

Other Rooms Emitted “Eau-De-Nothing”

Cyprus Sleepers experienced a 20 Percent INCREASE in NK Cells during their stay. Also felt less fatigued

Control Group saw NO changes

Li Q, Kobayashi M, Wakayama Y, Inagaki H, Katsumata M, Hirata Y, Hirata K, Shimizu T, Kawada T, Park BJ, Ohira T, Kagawa T, Miyazaki Y. Effect of phytoncide from trees on human natural killer cell function. Int J Immunopathol Pharmacol. 2009 Oct-Dec;22(4):951-9. doi: 10.1177/039463200902200410. PMID: 20074458.

ORIGINAL RESEARCH article

Front. Psychol., 04 April 2019 | https://doi.org/10.3389/fpsyg.2019.00722

Urban Nature Experiences Reduce Stress in the Context of Daily Life Based on Salivary Biomarkers

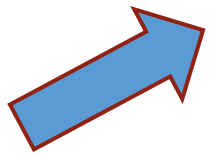
MaryCarol R. Hunter[1*], Brenda W. Gillespie[2] and Sophie Yu-Pu Chen[3]

[1]School for Environment and Sustainability, University of Michigan, Ann Arbor, MI, United States
[2]Consulting for Statistics, Computing, and Analytics Research, University of Michigan, Ann Arbor, MI, United States
[3]Department of Biostatistics, University of Michigan, Ann Arbor, MI, United States

Stress reduction through contact with nature is well established, but far less is known about the contribution of contact parameters – duration, frequency, and nature quality. This study describes the relationship between duration of a nature experience (NE), and changes in two physiological biomarkers of stress – salivary cortisol and alpha-amylase. It is the first study to employ long-term, repeated-measure assessment and the first evaluation wherein study participants are free to choose the time of day, duration, and the place of a NE in response to personal preference and changing daily schedules. During an 8-week study period, 36 urban dwellers were asked to have a NE, defined as spending time in an outdoor place that brings a sense of contact with nature, at least three times a week for a duration of 10 min or more. Their goal was compliance within the context of unpredictable opportunity for taking a nature pill. Participants provided saliva samples before and after a NE at four points over the study period. Before-NE samples

Effect		*n*	Beta	Standard error	*p*-value	% Cortisol drop/hour[A]
Intercept		110	−0.52	0.197	0.009	
Time of day (diurnal effect)		110	−0.125	0.0119	<0.0001	11.7%
Duration interval: length of NE (min) per quartile[B]	**NE frequency for each minute in the interval**	***n*/% of total sample**				**% Cortisol drop beyond diurnal effect[A]**
Q1: 7–14 min	1,2,1,2,5,7,7,3	28/25.5%	−0.0864	0.0561	0.13	8.3%
Q2: 15–20 min	5,2,8,1,6,5	27/24.5%	−0.0375	0.0572	0.51	3.7%
Q3: 21–30 min	4,1,3,2,6,4,3,1,1,5	30/27.3%	−0.2048	0.0545	0.0003	18.5%
Q4:>30 min	1,1,2,1,1,1,1,2,1,2,1, 1,1,1,1,1,1,2,1,1,1	25/22.7%	−0.1214	0.0600	0.045	11.4%

[A]Calculated as $e^{\text{beta estimate}} - 1$. [B]Reported in minutes, calculated as proportion of an hour. Mixed models of log cortisol levels as predicted by diurnal effects (time of day) using a linear function and by duration of a nature experience using a step function. The step function estimates are calculated for each quartile interval (Q) separately and are not cumulative. This model explains 26.7% of level-1 residual [repeated measure] variance, and 45.9% of level-2 [subject-level] variance, and 53.4% of level-3 [timepoint-level] variance.



Rivers, Oceans, Lakes, Ponds, Streams, Fountains



- BLUE SPACES FOR WELLNESS

Journal of Environmental Psychology
Available online 28 September 2022, 101876
In Press, Journal Pre-proof

Mechanisms underlying childhood exposure to blue spaces and adult subjective well-being: An 18-country analysis

Valeria Vitale [a, b], Leanne Martin [c], Mathew P. White [a, c], Lewis R. Elliott [c], Kayleigh J. Wyles [d], Matthew H.E.M. Browning [e], Sabine Pahl [a], Patricia Stehl [a], Simon Bell [f], Gregory N. Bratman [g], Mireia Gascon [h, i, j], James Grellier [c, k], Maria L. Lima [l], Mare Lõhmus [m], Mark Nieuwenhuijsen [h, i, j], Ann Ojala [n], Jane Taylor [o], Matilda van den Bosch [h, i, j, p, q] ... Lora E. Fleming [c]



- Examined the links between childhood exposure to blue spaces and adult well-being.
- Four alternative conceptual models were tested using data from 18 countries.
- Childhood exposure to blue spaces was associated with better adult well-being.
- The association was mediated by intrinsic motivations and recent nature visits.
- The pattern of associations was consistent in direction across countries.

Barriers to Accessing Nature















Green Heart Louisville

- 745 City Residents
- Thousands of trees planted in center of study area
- Residents in center of study area (rich in trees/shrubs)
  - Decrease in hsCRP levels



Virtual Reality Nature

ELSEVIER

Journal of Environmental Psychology

Volume 97, August 2024, 102366



Assessing the well-being benefits of VR nature experiences on group: Heart rate variability insights from a cross-over study

Susanne Kumpulainen, Samad Esmaeilzadeh, Arto J. Pesola



Effects of **virtual reality nature** in real-life group settings.

Virtual reality nature raises heart rate variability.

Various psychological gains from VR nature.

Virtual reality nature aids relaxation and recovery.

https://doi.org/10.1016/j.jenvp.2024.102366

Birdsongs-Mental Health

- 295 Participants, 6 minute exposure to Sounds
- Impact of Hearing Birds vs Traffic Sounds
- Anxiety: Overall Improved with Birdsong
- Paranoia: Overall Improved with Birdsong
- Depression: Worsened with Traffic Sounds



Stobbe, E., Sundermann, J., Ascone, L. *et al.* Birdsongs alleviate anxiety and paranoia in healthy participants. *Sci Rep* 12, 16414 (2022). https://doi.org/10.1038/s41598-022-20841-0

Viewing Nature

- Post Cholecystectomy Patients
- 23 patients-> Window with a View of a Natural Setting
- 23 patients-> Window Facing a Brick Wall
- Patients with View of Nature:
  - Shorter Hospital Stays
  - Fewer Negative Evaluative Comments in Nurse's Notes
  - Required Less Pain Medication



Ulrich RS. View through a window may influence recovery from surgery. Science. 1984 Apr 27;224(4647):420-1. doi: 10.1126/science.6143402. PMID: 6143402.

Viewing nature can restore children’s attention

2024 classroom experiment

145

schoolchildren
Average age: 9.3 years

After mentally demanding tasks

Children recovered attention after viewing nature images.
Children viewing urban images did not.

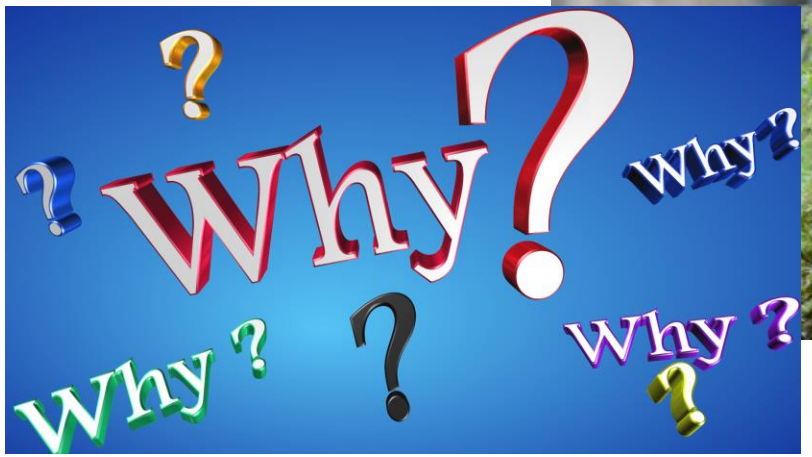
Interpretation: Short visual nature breaks may support attention during the school day.

Measured immediate effects. Mood improved with both nature and urban images.

Staats H, Collado S, Sorrel MA. Understimulation resembles overstimulation: Effects on school children’s attentional performance, affect, and environmental preference. Journal of Environmental Psychology. 2024;95:102280. https://doi.org/10.1016/j.jenvp.2024.102280

Nature IS Nurture





BIOPHILIA



Term originated 1973 by Erich Fromm (social psychologist). Also coined by E.O. Wilson

Described as “The Passionate Love of Life and of all that is Alive; it is the Wish to further Growth, whether in a Person, Plant, an Idea or a Social Group”

Innate Emotional Connection of Human Beings to Other Living Organisms

Not only aids in Survival, but also broader Human Fulfillment

Natural Environments are one of the few places to Experience All 5 Senses

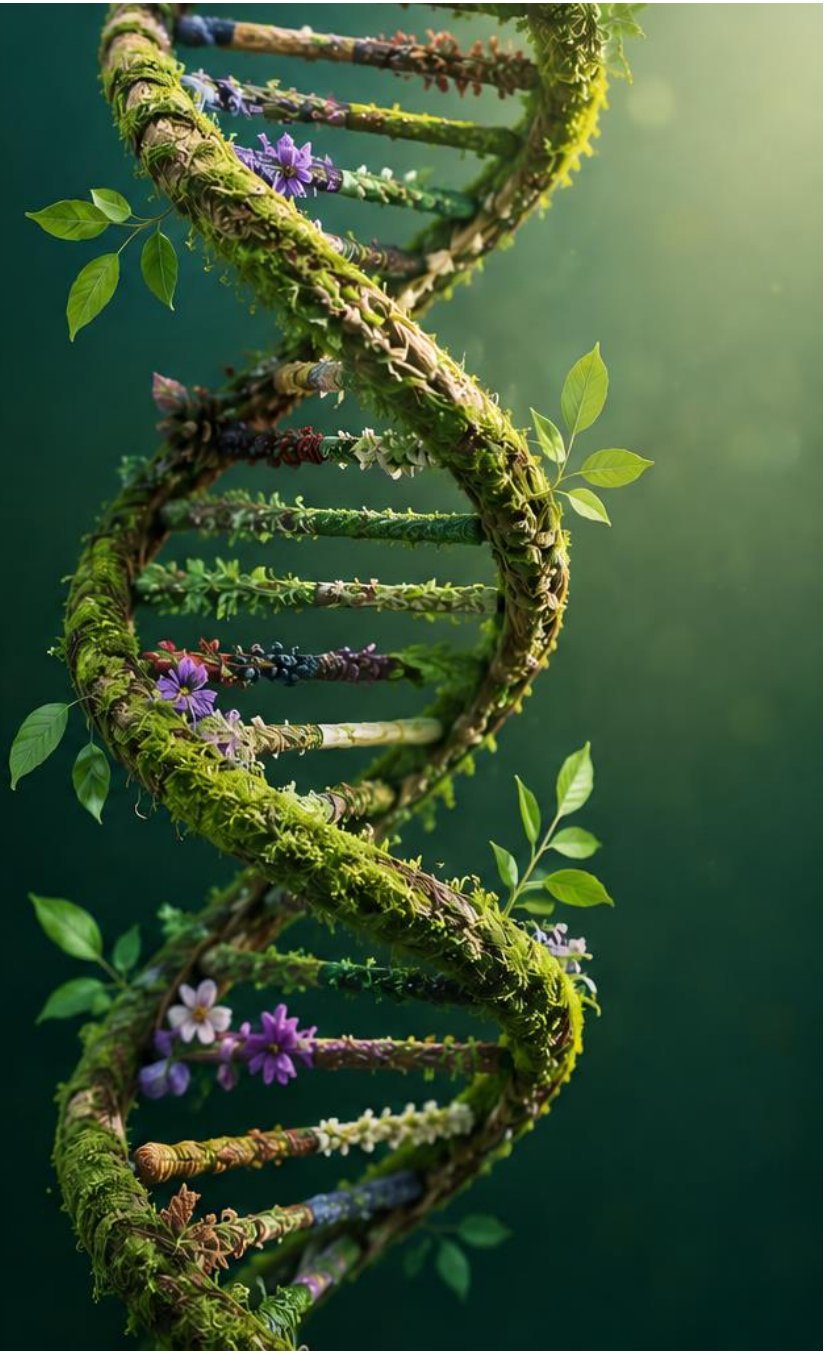

“BIOPHILIA
ISN’T A TREND.
IT’S OUR NATURE.”
We were born in nature.
We are biologically wired to connect with it.
When we do, we heal, we thrive,
and we remember who we are.
Nature is not outside of us.
NATURE IS PART OF US.”
– DOCTOR OUTDOORS™
DOCTOR
OUTDOORS™


NATURE
U R NATURE.
NATURE IS A PART OF YOU.

NATURE
IS PART OF
OUR DNA

OUR BIOLOGY EVOLVED WITH NATURE.
OUR WELLBEING THRIVES WITH IT.

DOCTOR OUTDOORS™



We Are Nature.

OUR BODIES REFLECT THE PATTERNS OF THE NATURAL WORLD.

FINGERPRINTS & TREE RINGS
Unique patterns of life's story.



ASPEN TREE "EYES" & HUMAN EYES
Both see, sense and adapt.



BRONCHI & TREE BRANCHES
Branching systems
that oxygenate life.



BLOOD VESSELS & RIVER NETWORKS
Flowing systems that sustain all life.



HEART & SEED POD
Protects, pumps and gives life.



BRAIN & FOREST
Complex networks
that process and connect.



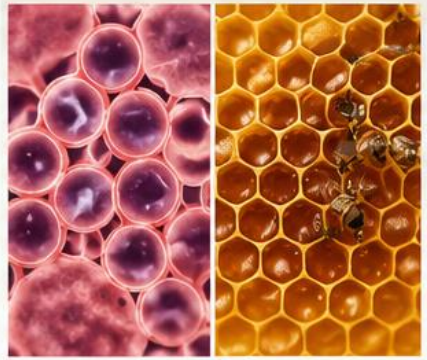
EARS & SHELLS
Designed to collect
and transmit sound.



SPINE & MOUNTAIN RIDGE
Strong, flexible and
built to support.



ALVEOLI & HONEYCOMB
Efficient structures
for exchange and life.



DNA & FERN FIDDLEHEAD
The blueprint
for growth and life.



From the smallest cell to the tallest tree, the same intelligence, patterns and purpose connect us.

Nature is not outside of us. Nature is part of us.











Attention Restoration Theory



- ART suggests the ability to concentrate may be restored by exposure to natural environments

- ART proposes that individuals benefit from the chance to:
  - “Be Away” from everyday stresses
  - Experience expansive spaces and contexts
  - Engage in activities that are “compatible” with our intrinsic motivations
  - Critically experience stimuli that are “softly fascinating”

- This combination of factors encourages “involuntary” or “indirect attention” and enables our “voluntary” or “directed” attention capacities to recover and restore

Ohly, H., White, M. P., Wheeler, B. W., Bethel, A., Ukoumunne, O. C., Nikolaou, V., & Garside, R. (2016). Attention Restoration Theory: A systematic review of the attention restoration potential of exposure to natural environments. *Journal of Toxicology and Environmental Health, Part B*, *19*(7), 305–343. https://doi.org/10.1080/10937404.2016.1196155

ARTICLE OPEN

Check for updates

How nature nurtures: Amygdala activity decreases as the result of a one-hour walk in nature

Sonja Sudimac[1,2,3]✉, Vera Sale[1,2] and Simone Kühn[1,2,4,5]

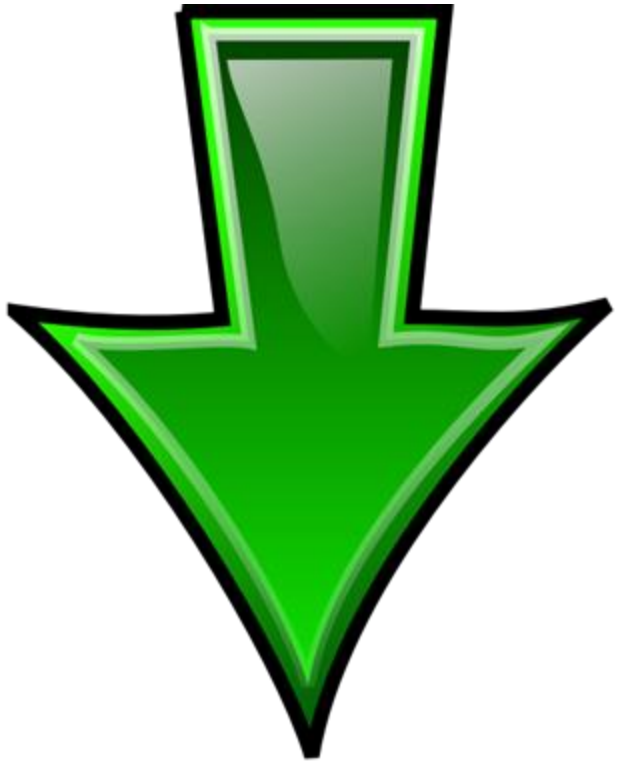
© The Author(s) 2022

Since living in cities is associated with an increased risk for mental disorders such as anxiety disorders, depression, and schizophrenia, it is essential to understand how exposure to urban and natural environments affects mental health and the brain. It has been shown that the amygdala is more activated during a stress task in urban compared to rural dwellers. However, no study so far has examined the causal effects of natural and urban environments on stress-related brain mechanisms. To address this question, we conducted an intervention study to investigate changes in stress-related brain regions as an effect of a one-hour walk in an urban (busy street) vs. natural environment (forest). Brain activation was measured in 63 healthy participants, before and after the walk, using a fearful faces task and a social stress task. Our findings reveal that amygdala activation decreases after the walk in nature, whereas it remains stable after the walk in an urban environment. These results suggest that going for a walk in nature can have salutogenic effects on stress-related brain regions, and consequently, it may act as a preventive measure against mental strain and potentially disease. Given rapidly increasing urbanization, the present results may influence urban planning to create more accessible green areas and to adapt urban environments in a way that will be beneficial for citizens' mental health.

Molecular Psychiatry; https://doi.org/10.1038/s41380-022-01720-6

Deprescribing with Nature











T

Results



Cross-sectional associations of different types of nature exposure with psychotropic, antihypertensive and asthma medication

Anu W Turunen [1], Jaana Halonen [2], Kalevi Korpela [3], Ann Ojala [4], Tytti Pasanen [5], Taina Siponen [5], Pekka Tiittanen [5], Liisa Tyrväinen [4], Tarja Yli-Tuomi [5], Timo Lanki [5 6 7]

Affiliations + expand

PMID: 36646464 PMCID: PMC9887361 DOI: 10.1136/oemed-2022-108491

- More frequent visits to Green Spaces (3-4x/week)
  - Decreased need for Medications related to:
    - Mental Health Conditions
    - High Blood Pressure
    - Asthma
- Higher nature exposure->Greater Likelihood of reducing or stopping medications compared to individuals with less exposure

Turunen AW, Halonen J, Korpela K, *et al*Cross-sectional associations of different types of nature exposure with psychotropic,

Movement In Nature



Forms of Movement in Nature



- WALKING/JOGGING
- GARDENING
- HIKING
- BIKING
- SWIMMING
- SKIING
- BIRD WATCHING
- YOGA/TAI CHI
- KAYAKING/CANOEING
- FISHING

Health Benefits of Gardening



- Immune System Booster
- Stress Reducer
- Work Out
- Bacteria Friends
- Eat The Rainbow



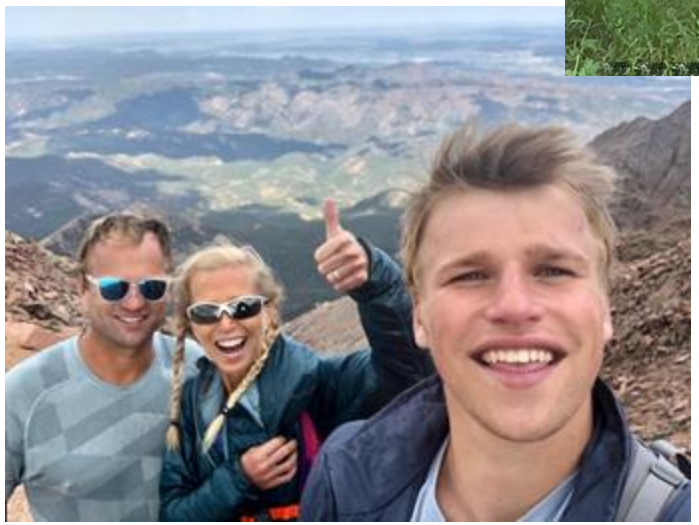



DWD
HELL
KAREN'S TRAIL
HELL MI
2022
50K
1ST FEMALE




EPIC TIMING
FINISH
464

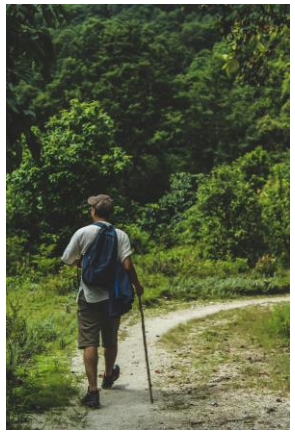

3498
3499



Cognitive benefits of walking in natural versus built environments

Andrew W. Bailey, Garrett Allen, Josh Herndon & Christian Demastus

Pages 293-305 | Received 09 Jun 2017, Accepted 24 Sep 2017, Published online: 02 Mar 2018



- Outdoor Walks Improve Cognition More Than Indoor Walks (Stroop Test)
- EEG Shows Greater Meditative Brain Activity During and After Outdoor Walking
- Supports Green Prescriptions for Cognitive and Mental Health Benefits

Abstract

Leisure time physical activity can be a robust preventer of physical and mental illness. The health benefits of exercise have been well-documented, including decreased risk for obesity, diabetes, and heart disease, and increased mood, life-satisfaction and cognitive performance (An, Xiang, Yang, & Yan, 2016; Blair & Morris, 2009). Time spent outdoors is also emerging as a predictor of positive mental health, though the outcomes are often conflated with heightened levels of physical activity. This study sought to confirm the cognitive benefits of exercise in outdoor environments using established cognitive tests while measuring brainwave activity throughout the process using portable electroencephalograph (EEG) headsets. Participants completed cognitive performance tests before and after walking indoors, then again on a different session while walking outdoors. Repeated-measures analyses of variance revealed significant cognitive improvement after both walking sessions, with elevated mental restoration observed for the outdoor walking session, as measured by a Stroop Test. EEG measures revealed a significantly higher level of meditative state during the outdoor walking session, as compared to indoors. In addition, the gains in relaxed and meditative mental states were retained longer after walking outdoors. Results are discussed within the context of growing support for leisure time exposure to natural environments and outdoor prescriptions. Implications for planning, health policy, and public education are proffered in light of these findings.

Bailey, Andrew W., et al. "Cognitive benefits of walking in natural versus built environments." *World Leisure Journal* 60.4 (2018): 293-305.


FOLLOW ME
Back to nature.
For good.
DOCTOR OUTDOORS™
RECLAIM YOUR NATURE
DOCTOR OUTDOORS™
NATURE
HEALTH
LONGEVITY

Nature is Not Outside of Us.
Nature is Part of Us.



Doctor Outdoors™

RECLAIM YOUR NATURE

The N.A.T.U.R.E.

FRAMEWORK FOR WELL-BEING

Reconnecting with nature supports every part of who we are.



DOCTOR OUTDOORS™

RECLAIM YOUR NATURE

N — **NOURISHMENT**
Fuel your body and mind with whole, natural, life-giving foods.

A — **ACTIVITY**
Move your body daily through play, purpose and challenge.

T — **TIME IN NATURE**
Spend meaningful time outdoors in all seasons.

U — **UNPLUG & UNDERSTAND**
Disconnect from devices to reconnect with what matters.

R — **RELATIONSHIPS & RECIPROCITY**
Build deep connections and give back to nature and others.

E — **ENVIRONMENTAL ALIGNMENT**
Live in ways that support the health of the planet and future generations.

Reclaim Your Nature.

NATURE AMPLIFIES

ALL 6 PILLARS OF LIFESTYLE MEDICINE

Nature exposure positively influences all major lifestyle medicine domains tied to human longevity.



Nature is the original *prescription.*



DOCTOR OUTDOORS™
RECLAIM YOUR NATURE

BACK TO NATURE. FOR GOOD.

NATURE. MEDICINE. LONGEVITY.

Is There A Difference??

Ultra-Processed Foods



Ultra-Processed Life



More GREENtime…Less SCREENtime





The pediatric “nature gap” in numbers

~90%

of time indoors

EPA summary of National Human Activity Pattern Survey; general U.S. population

5 h 33 m

entertainment screen media/day

U.S. tweens ages 8–12, 2021

8 h 39 m

entertainment screen media/day

U.S. teens ages 13–18, 2021

81%

insufficiently active

Global school-going adolescents ages 11–17, 2016 data

Outdoor time: estimates vary by age, season, location and measurement method. Reviews commonly find roughly 1–1.5 hours/day, but there is no single current U.S. national outdoor-time metric.

Why pediatric nature connection matters

Nature contact is a low-cost setting for movement, regulation, learning, sleep and relationships.

Mind

Supports attention restoration, reduced stress and emotional regulation.

Body

Invites moderate-to-vigorous activity, motor challenges and daylight exposure.

Sleep

Daylight and activity help reinforce healthy circadian timing.

Belonging

Outdoor play creates space for family connection, peer play and community.

Clinical frame Nature is not a replacement for indicated treatment. It is a health-promoting exposure that can be layered into daily routines and care plans.

Sedentary time is not the same as screen time

Both matter, and outdoor routines can address them together.

Sedentary behavior

Waking behavior while sitting, reclining or lying with low energy expenditure. Homework, reading and riding in a car may all be sedentary.

Screen exposure

Time using televisions, phones, tablets, computers or gaming devices. Some screen use can be active or educational, but it often displaces sleep, movement and face-to-face play.

Nature connection creates a positive substitution: stand up + step outside + engage the senses.

Health benefits of nature for children

Nature contact and outdoor play can support:

More movement
Active play and physical fitness

Mental well-being
Less stress and improved mood

Attention and learning
Focus, curiosity and creativity

Motor development
Balance and coordination

Social connection
Shared play and family bonding

Eye health
Outdoor time lowers myopia onset risk



Source: American Academy of Pediatrics, HealthyChildren.org (updated April 2026)

Natural settings may reduce cognitive load while offering “soft fascination” and sensory regulation.

Mental health, stress and attention

- Stress regulation

Attention restoration

Nature may help directed attention recover after sustained academic or screen demands.

- Greener settings are associated with lower perceived stress and can support calming routines.

Mood support

Outdoor movement, daylight and social play can work together to support wellbeing.

ADHD symptoms

Small studies suggest short green-space exposures may improve attention; evidence is promising, not definitive.

Physical health and development

Outdoor environments naturally add variety, intensity and challenge to movement.



More outdoor time is consistently associated with more physical activity and less sedentary time in children.

Illustrative pathway strength, not effect sizes

Design for access, safety and belonging

A nature prescription only works when the plan fits the child, family and neighborhood.

Access

Consider transportation, neighborhood safety, disability access, weather, caregiver schedules and cost.

Clinical safety

Tailor for asthma, allergies, heat/cold risk, mobility, infection risk, sun protection and water safety.

Culture & choice

Ask what “nature” means to the family. A porch, courtyard, garden, street tree or lakefront may all count.

Trauma-informed

Offer predictability, sensory choice, gradual exposure and permission to stop.



A practical pediatric nature prescription

Start small, make it specific, and connect it to an existing routine.

1. **ASK** — Where does the child already enjoy being outdoors?
2. **AGREE** — Choose one safe, realistic activity and frequency.
3. **ANCHOR** — Attach it to school pickup, dinner, therapy or bedtime wind-down.
4. **TRACK** — Notice minutes outside, enjoyment, sleep, stress or symptoms.
5. **ADAPT** — Adjust for weather, season, access and clinical needs.



Examples by age and ability

The best activity is one the child can access, enjoy and repeat.

Early childhood

10-minute sensory walk
Mud kitchen or water play
Collect leaves by color

School age

Playground "nature circuit"
Garden snack tasting
Bird or cloud count

Adolescents

Walk-and-talk with a friend
Outdoor photography
Trail, bike or stewardship project

Limited mobility / Medical complexity

Window or courtyard nature
Raised-bed gardening
Birdsong, natural light and adapted trails

Dose idea: begin with 10–20 minutes, 3–5 days/week, then build toward a daily outdoor routine when feasible.

Build nature into pediatric care

Shift from advice to a simple, repeatable workflow.

Screen

Outdoor minutes, safe access, favorite activities, barriers

Counsel

Connect nature to the family's priority: stress, sleep, movement or connection

Prescribe

Write one SMART nature action in the after-visit summary

Connect

Share nearby parks, accessible trails, gardens, recreation and school resources

Follow up

Ask what worked; celebrate progress; modify the plan



Grounding Technique in Nature





5 THINGS YOU CAN SEE



4 THINGS YOU CAN FEEL



3 THINGS YOU CAN HEAR



2 THINGS YOU CAN SMELL



1 THING YOU CAN TASTE

PRESCRIBING NATURE









Social Prescribing

Definition

- A holistic approach where healthcare providers refer individuals to non-clinical community-based activities to improve health and well-being.
- Goes beyond medications — connects patients with lifestyle, social, and environmental resources.

Key Elements

- Link workers or community connectors guide individuals.
- Common prescriptions: exercise classes, volunteering, arts, nature walks.

Nature as a Prescription

- Growing evidence that time in green and blue spaces improves stress, cardiovascular health, immunity, and mood.
- "Green prescriptions" are being integrated into clinical care in the UK, US, and beyond.



Chatterjee, H. J., Camic, P. M., Lockyer, B., & Thomson, L. J. M. (2017). Non-clinical community interventions: a systematised review of social prescribing schemes. *Arts & Health*, *10*(2), 97–123. https://doi.org/10.1080/17533015.2017.1334002



PRA - Nature Prescribed (parkrxamerica.org)

https://parkrxamerica.org/prescribe/



Rx

Melissa Sundermann, DO

Lifestyle Medicine

PLACE Preservation Park

Edit selected parks | Start over

ACTIVITY Hike with your family and dogs

FREQUENCY 2x per week

DURATION 30-60 minutes

Submit in English

Enviar in Español



https://parkrxamerica.org/prescribe/



SCHEDULE REMINDERS

Send by Text | **Send by Email**

PATIENT EMAIL ADDRESS(ES)

motivatormelissa@gmail.com

(separate multiple emails with a comma)

FREQUENCY: ☑ Mon ☑ Tue ☑ Wed ☑ Thu ☑ Fri ☑ Sat ☑ Sun

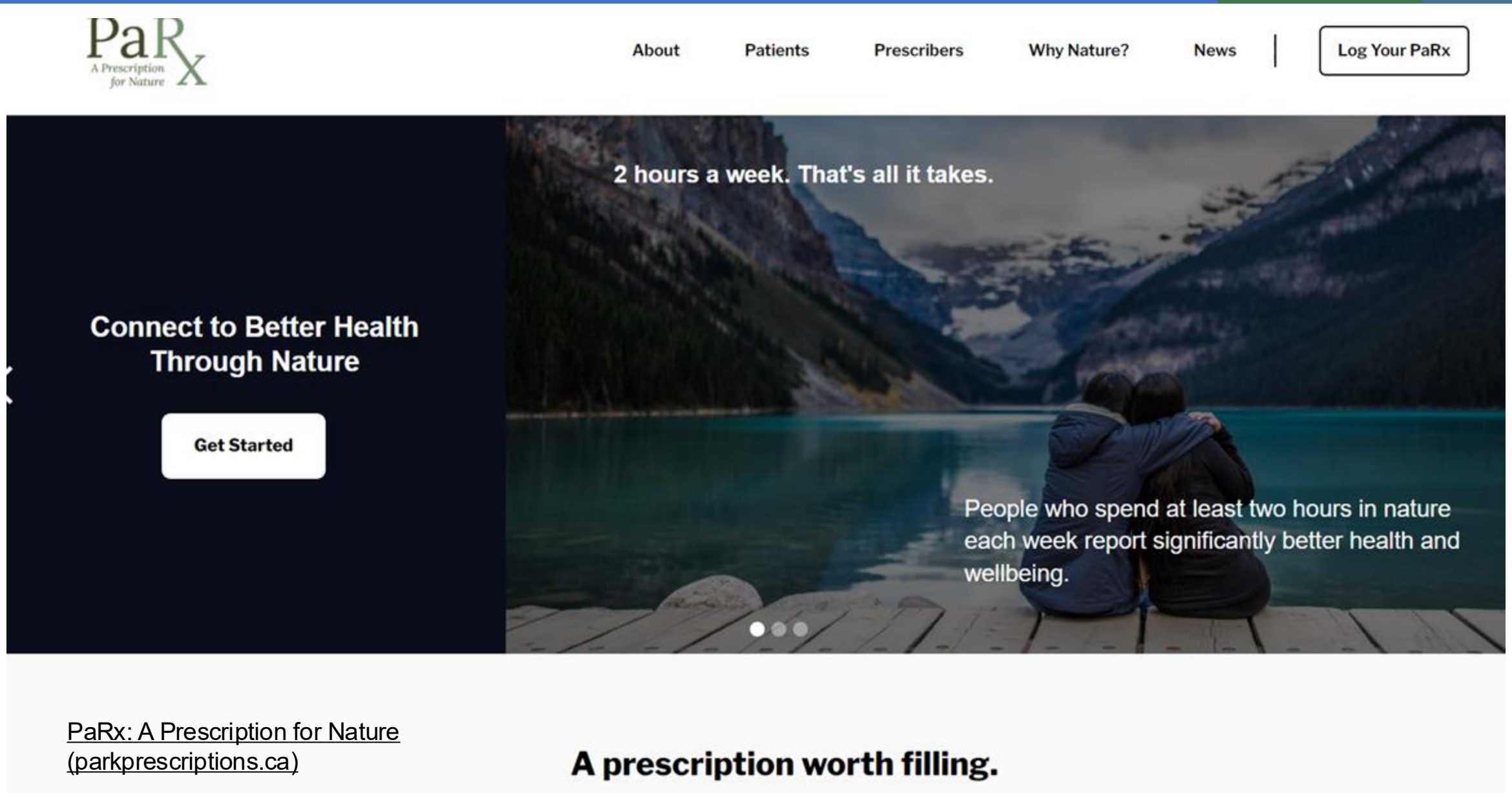
check all | clear all

DURATION: ○ 1 week ○ 2 weeks ○ 1 month ○ 2 months ○ 3 months

Send Reminder...

Cancel reminder and complete script





PaRx: A Prescription for Nature (parkprescriptions.ca)



- Launched in November 2020
- Canada's 1st Nature Prescription
- Recommend spending a Minimum of 2 hours/week in Nature at least 20minute Intervals
- PaRX Medical Professionals can prescribe "Adult Parks Canada Discovery Pass"
- Pass covers Year-Long Admission to over 80 Destinations Across Canada

Take-home message

Nature connection is a practical pediatric health behavior that can support movement, attention, stress regulation, sleep and relationships.

Ask one question. Prescribe one small action. Help one family get outside more often.

Melissa Sundermann, DO, FACOI, DipABLM, FACLM
Medical Director, Lifestyle Medicine | Corewell Health

Practice Brief

Melissa Sundermann, Deborah Chielli, and Susan Spell

Nature As Medicine: The 7th (Unofficial) Pillar of Lifestyle Medicine

Abstract: *There are 6 Official Pillars of Lifestyle Medicine, and now mounting evidence supports daily exposure to nature and fresh air as vital to optimizing overall physical and mental health. Time spent in nature has been shown to help lower blood pressure, reduce nervous system arousal, enhance immune system function, reduce anxiety and increase self-esteem. engage individuals to spend more time outdoors.*

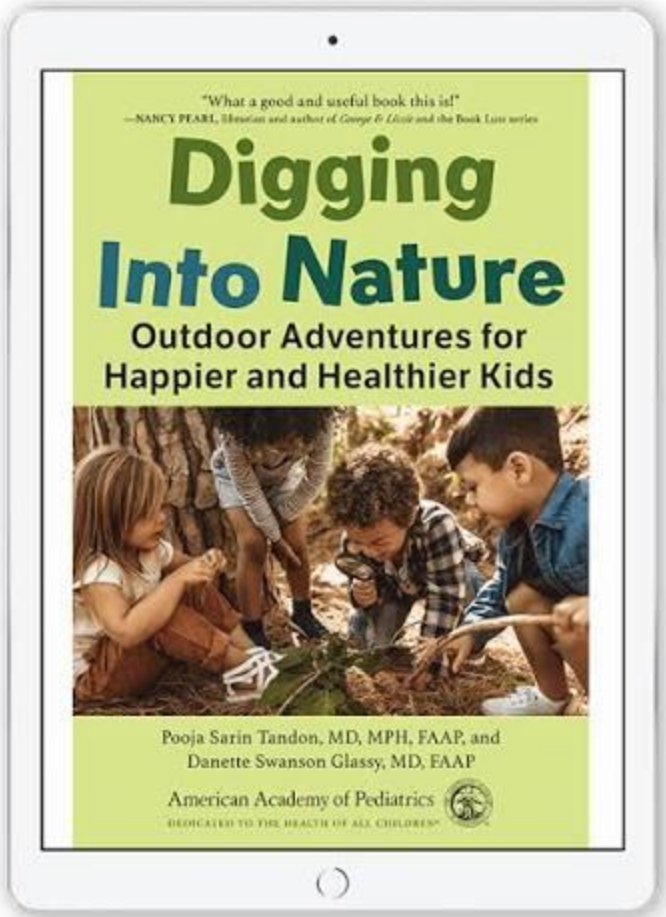
Keywords: nature; healing benefits of nature; forest bathing; Shinrin-Yoku; phytoncides; immune system; biophilia; attention restoration theory; stress recovery theory

Introduction

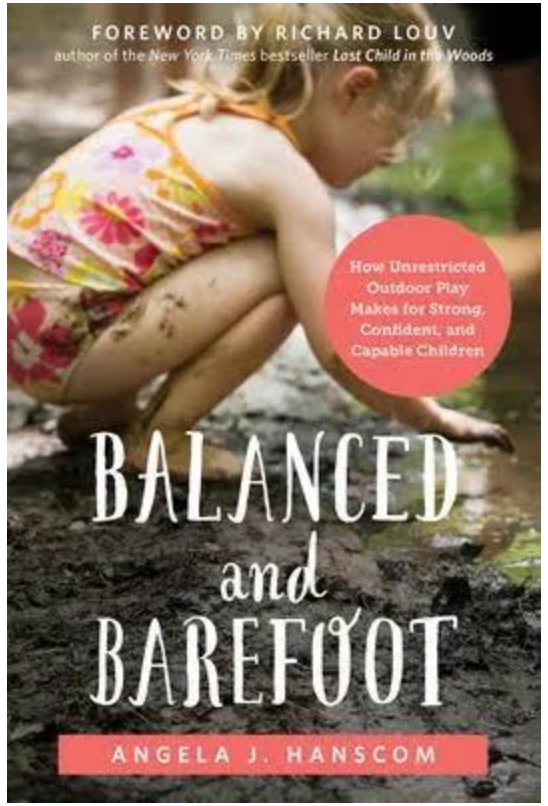
a long time: that nature has a profound impact on our physical, mental, and emotional well-being. This has led to a growing interest in using nature as a form of medicine, both as a complementary therapy and as a preventative measure. In this context, nature is seen as not only a place of beauty and wonder, but as an essential part of our overall health and wellness. In this article,

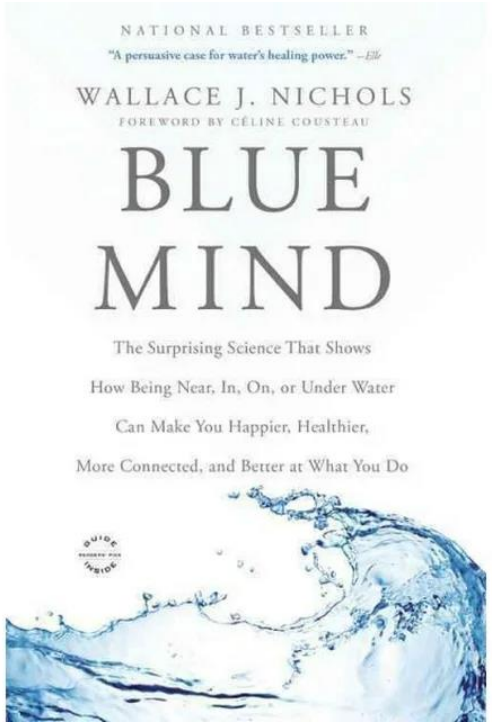
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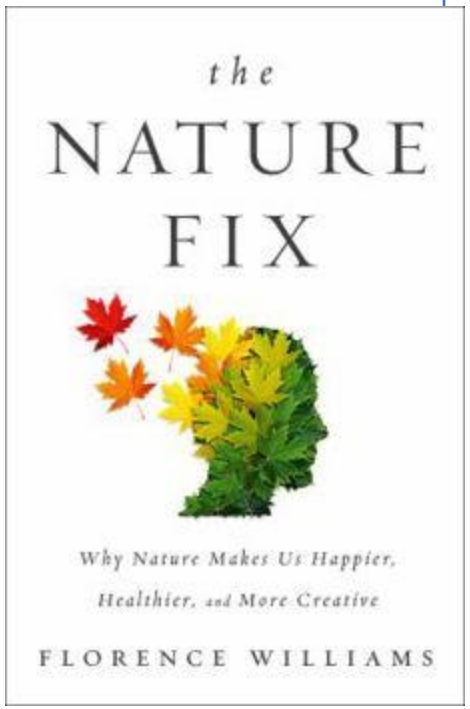
Sundermann M, Chielli D, Spell S. Nature As Medicine: The 7th (Unofficial) Pillar of Lifestyle Medicine. American Journal of Lifestyle Medicine. 2023;17(5):717-729. doi:10.1177/15598276231174863

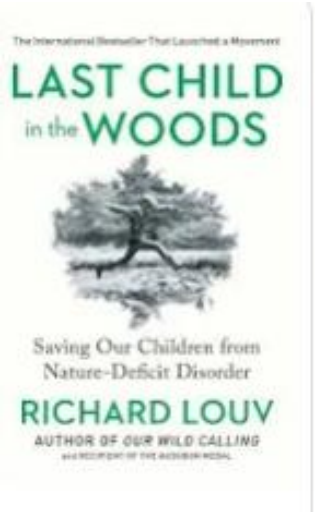


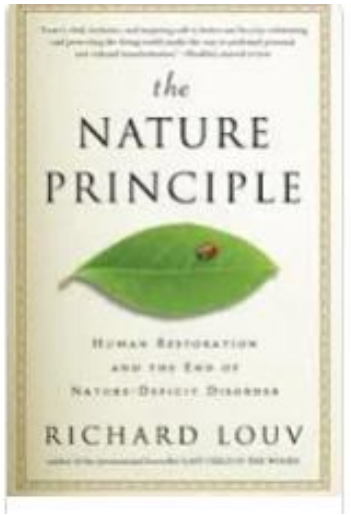
Children & Nature Network

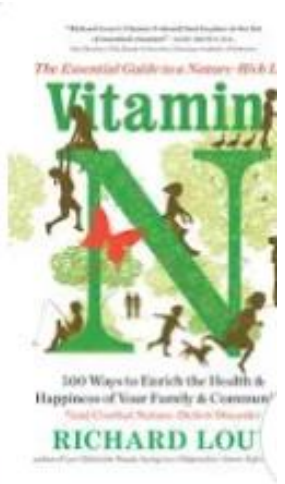



NATIONAL BESTSELLER
"A persuasive case for water's healing power." —Elle
WALLACE J. NICHOLS
FOREWORD BY CÉLINE COUSTEAU
BLUE MIND
The Surprising Science That Shows
How Being Near, In, On, or Under Water
Can Make You Happier, Healthier,
More Connected, and Better at What You Do


the
NATURE
FIX
Why Nature Makes Us Happier,
Healthier, and More Creative
FLORENCE WILLIAMS


LAST CHILD
in the WOODS
Saving Our Children from
Nature-Deficit Disorder
RICHARD LOUV
AUTHOR OF OUR WILD CALLING


the
NATURE
PRINCIPLE
RICHARD LOUV


Vitamin
N
RICHARD LOU



Nature of Wellness Podcast

Dr. Mark A. Campbell

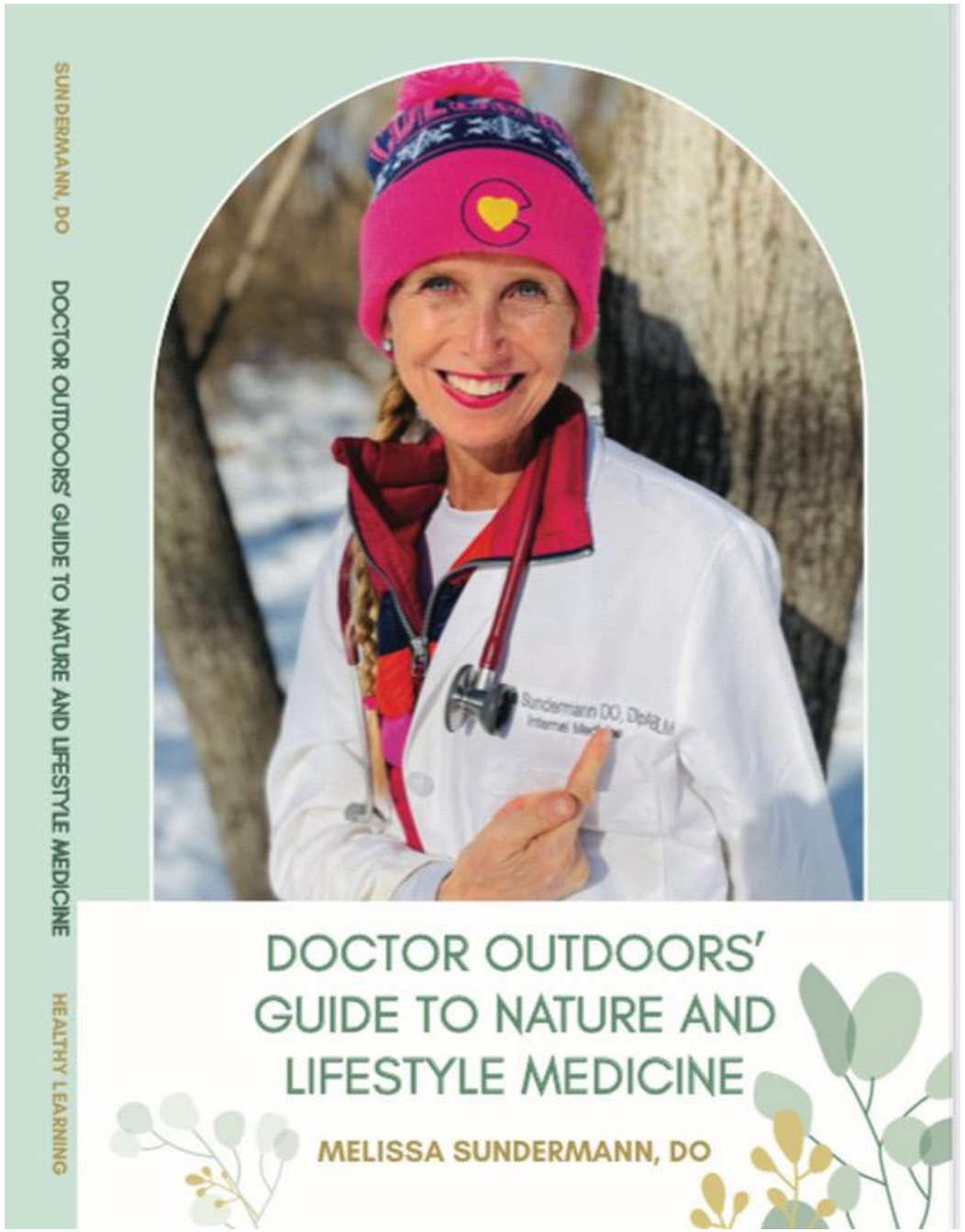
Throughout history, cultures around the world have turned to nature as a source of increased health and well-being. While science continues to support this connection, and more programs are emerging to help us understand it, humans

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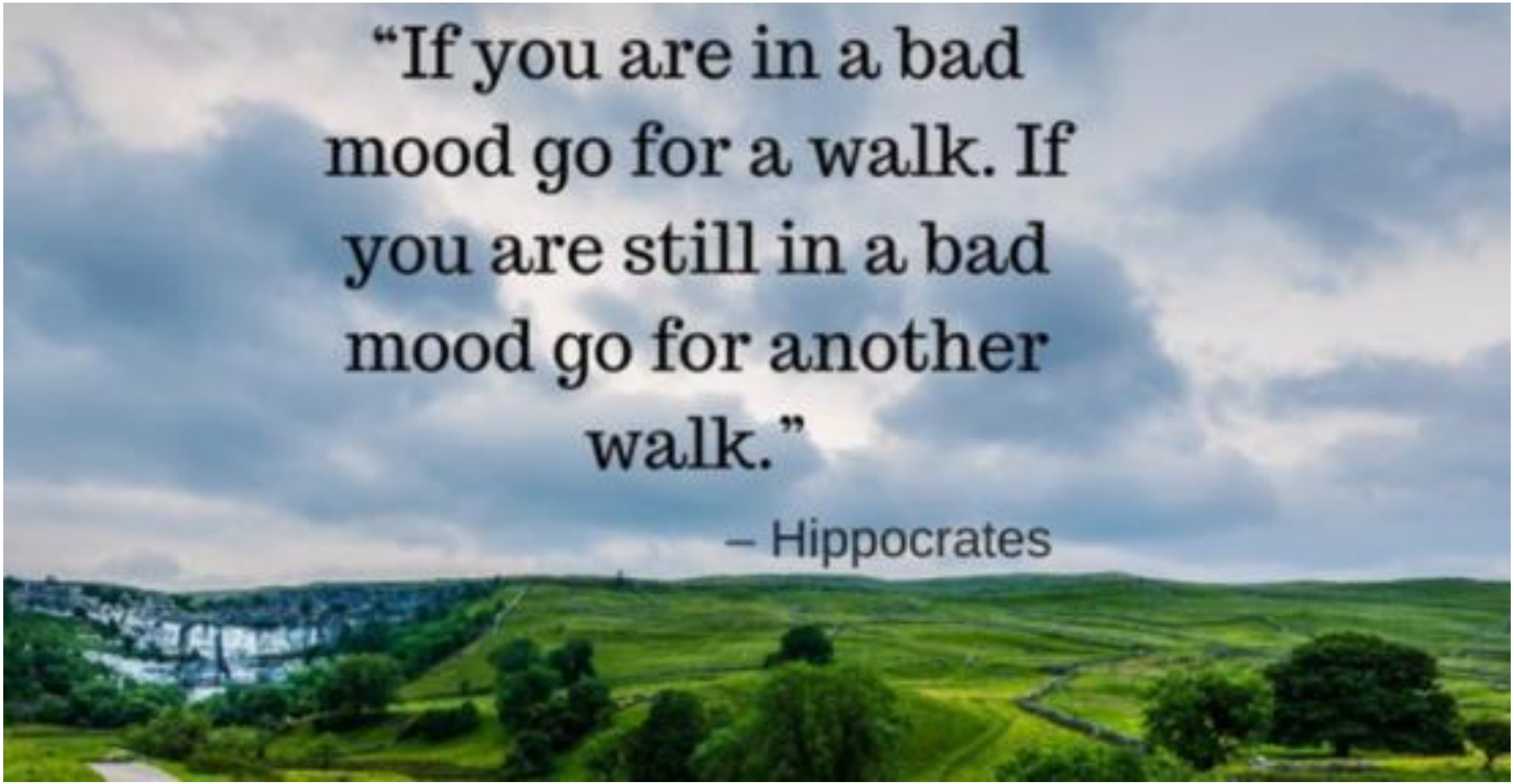
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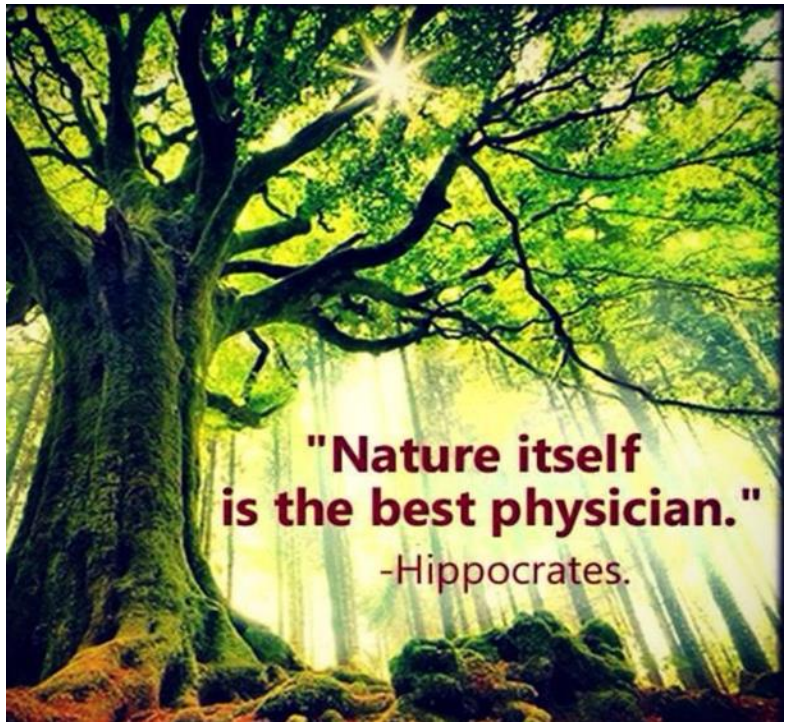


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"If you are in a bad mood go for a walk. If you are still in a bad mood go for another walk."
– Hippocrates


WHAT
ARE
YOUR
NEXT STEPS?
THE BEST VIEW
COMES AFTER
THE HARDEST CLIMB



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