

SHIFT health & nature

webinar series

Chapter 1: The Health & Nature Movement

Michael Suk, MD
presents

Nature as Medicine

March 10, 2020

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Scholarship



About the Webinar Series

March-September 2020

Every 2nd & 4th Tuesday of the month at 10:00 - 11:00 AM MT

CHAPTER 1

The Health & Nature Movement

March 10 & March 24

CHAPTER 2

Public Health:

Nature as an Intervention Strategy

April 14, April 28, & May 12

CHAPTER 3

Conservation:

Public Health as an Ecosystem Service

May 26, June 9, & June 23

CHAPTER 4

Land Management:

Land Use and Public Health

July 14, July 28, & Aug 11

CHAPTER 5

Outdoor Recreation:

The Health Benefits of Time Outside

Aug 25, Sep 8, & Sep 22



Photo by James Wheeler

SHIFT

Christian Beckwith

Director, SHIFT



Mission: To advance and promote the importance of nature as a social determinant of health.

Nature as a public health intervention strategy =
stronger argument for nature itself

Michael Suk, MD, JD, MPH, MBA, FACS



Chief Physician Officer, Geisinger System Services
Chair, Musculoskeletal Institute & Department of Orthopaedic Surgery
Professor, Orthopaedic Surgery, Geisinger Commonwealth School of Medicine
Member, Board Of Trustees, American Medical Association

A photograph of three children lying on their backs on a lush green lawn. The child on the left is in the foreground, with their feet raised high and toes pointing towards the camera. The other two children are lying further back, also with their feet raised. The background is a soft-focus green, suggesting a park or garden setting. The text "Nature as Medicine" is overlaid in white, sans-serif font in the center-right of the image.

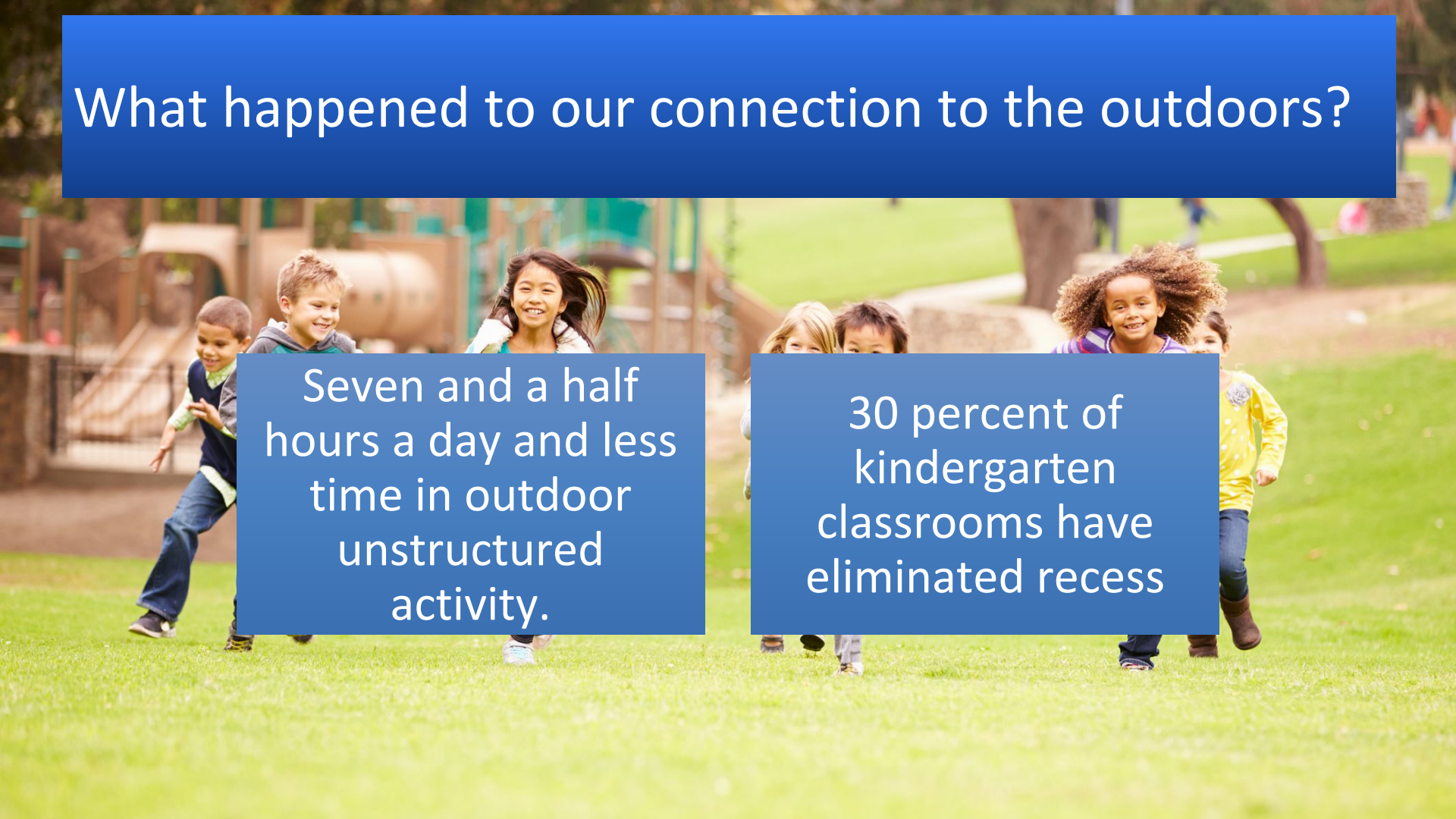
Nature as Medicine



What happened to our connection to the outdoors?



What happened to our connection to the outdoors?



Seven and a half hours a day and less time in outdoor unstructured activity.

30 percent of kindergarten classrooms have eliminated recess



The Science Behind the Health Benefits of Nature

Smarter!



A young girl with her eyes closed, surrounded by falling flower petals. The petals are in various colors including pink, yellow, red, and blue, and are scattered throughout the frame, creating a dreamy, ethereal atmosphere. The background is a soft, out-of-focus green, suggesting a garden or park setting. The girl's face is partially visible, with her eyes closed and a peaceful expression. The overall image conveys a sense of mindfulness, focus, and connection with nature.

Smarter!

Concentration

Self discipline

Language and
collaborative skills

Awareness,
reasoning and
observational skills

Stronger!



Stronger!

A low-angle shot of five children jumping joyfully on a grassy hill. From left to right: a boy in a purple shirt and blue jeans, a girl in a red top, a boy in a striped shirt and blue jeans, a girl in a pink dress, and a boy in a blue shirt. They are all smiling and have their arms raised. The background is a clear blue sky and green grass.

Advanced motor
fitness,
coordination,
balance and agility

Buffers the impact
of life stress on
children and helps
them deal with
adversity.

Better!



Better!

Reduces or
eliminates
bullying

Enhance
powers of
observation
and creativity

Positivity

Independence
and
autonomy



Short Term Memory

Nature walks are best

Trees and fields beat roads and lampposts

Depression

Improved memory

Improved mood



Unhappy? Move Near a Park



Unhappy? Move Near a Park

City dwellers are more likely to suffer from mental health disorders than people who weren't born and raised in an urban environment.

Moving to more verdant sections of a city, for example, can produce long-lasting mental health benefits.

Based on a six-year national longitudinal survey of U.K. households, the researchers looked at the mental health of more than 1,000 people who moved residences, and whether their new home was located in a place with more or less green space like parks and gardens.

Reduce Mental Fatigue and Inspire Awe



Reduce Mental Fatigue and Inspire Awe

Mental energy bounce back just looking at pictures of nature

Awe expands people's perception of time, enhances well-being and causes people to behave more altruistically and less materialistically.


There are two things needed for a true awe experience:

- Perceptual vastness
- Need for accommodation

Stuck on an Idea? Walk Through The Park



Stuck on an Idea? Walk Through The Park



Green spaces
lessen “brain
fatigue”

Directed mental
attention vs.
soft fascination

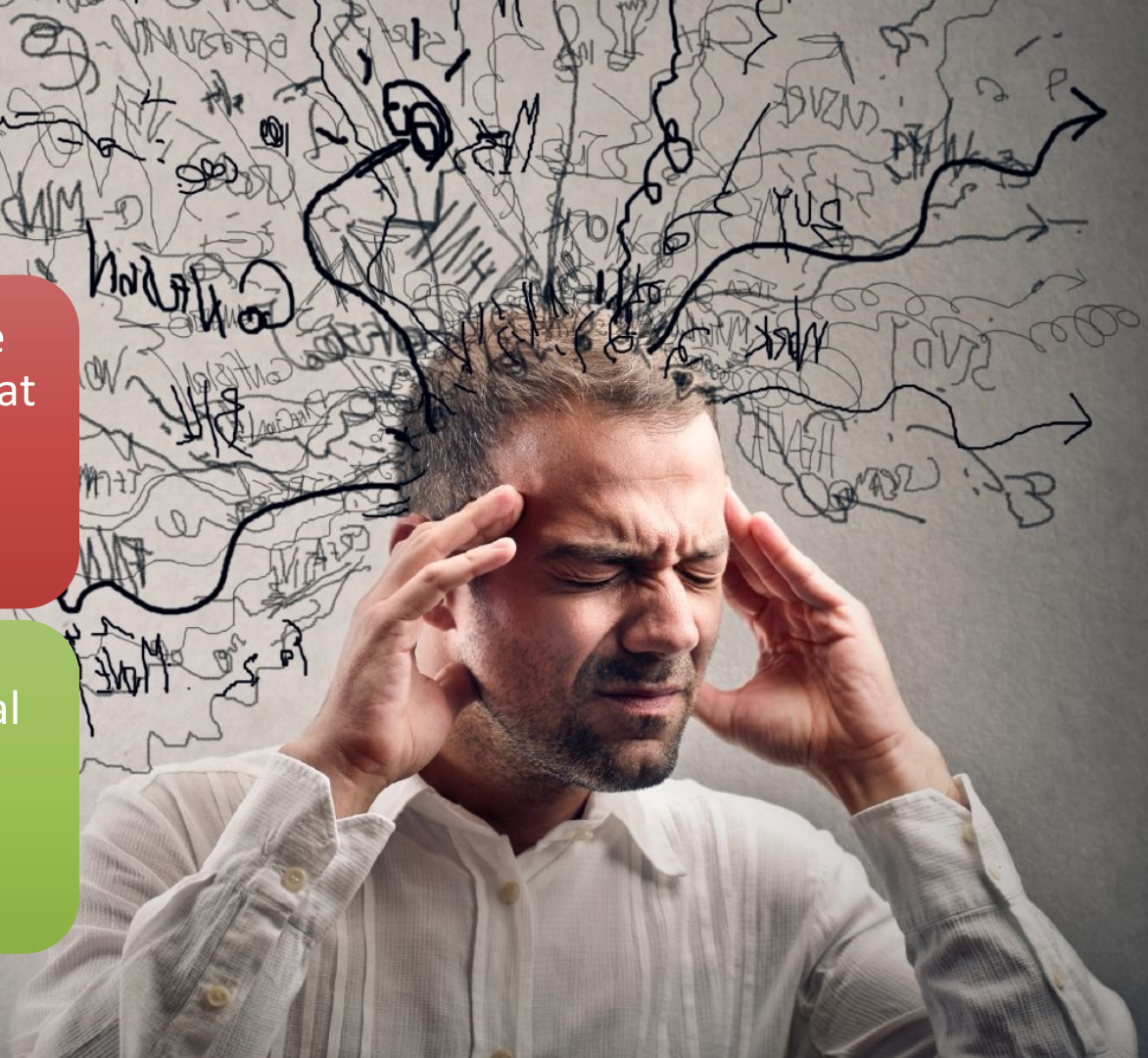
Brain Effects



Brain Effects

Hemoglobin levels drop in the prefrontal cortex, meaning that the home base of executive function has switched a few lights off

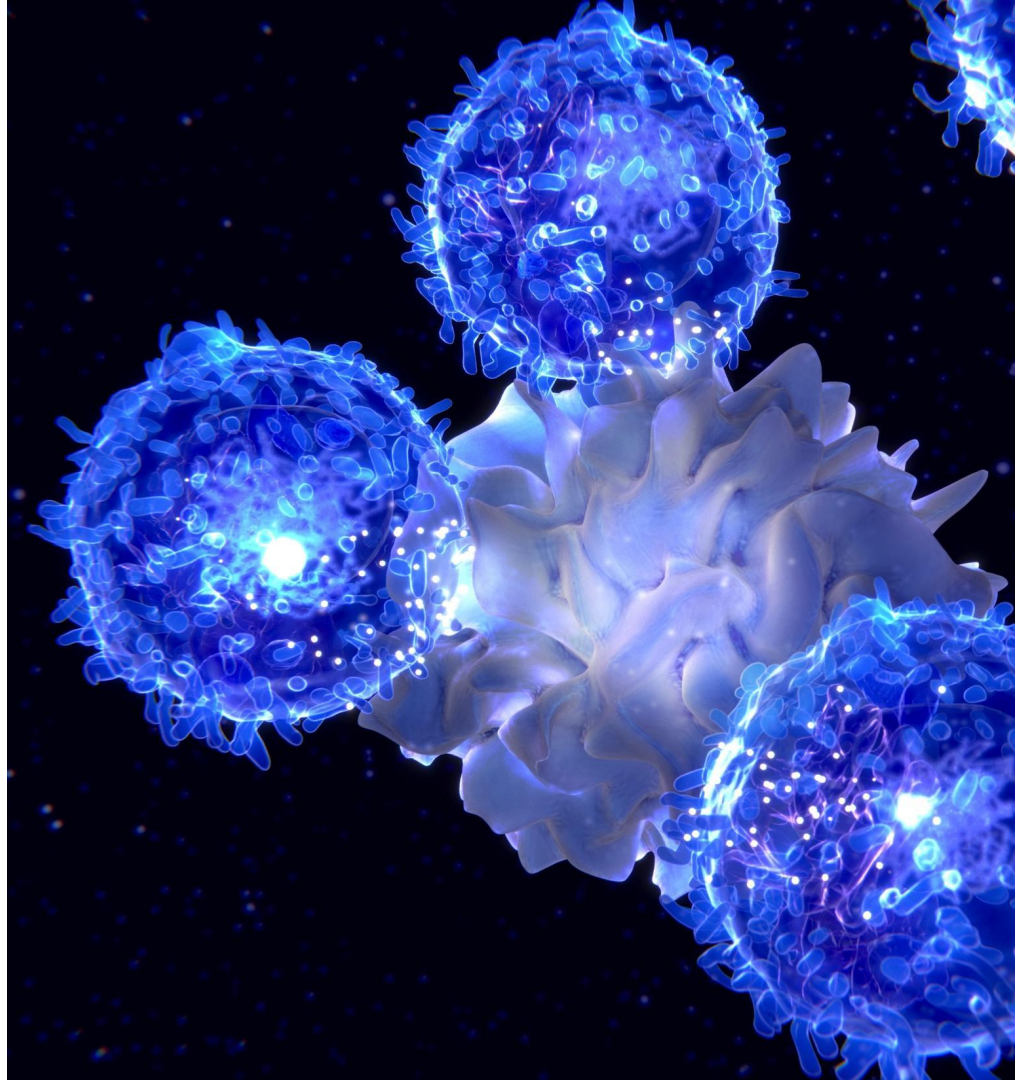
Rise in the insula and the basal ganglia associated with emotion, pleasure, and empathy.



Immunity

Increase in NK activity,
intracellular granulysin,
perforin, and granzymes A/B.

Remained elevated 30 days
later!





Reduce Inflammation

Decreased levels
of IL-6, and tumor
necrosis factor α

Shinrin-Yoku



Shinrin-Yoku

Five million years has passed since the evolutionary origin of man

> 99.99% of our evolutionary history has been spent in natural environments, it is thought that we are essentially adaptive to nature.

However, we live in a society characterized by urbanization and artificiality, despite our physiological functions still being adapted to nature.

Communication Gap



Communication Gap

The leisure field has been traditionally focused on psychological processes (e.g., enjoyment, perceived freedom or social interaction)

Public health is focused on the physiological products (e.g., METs, lowered blood pressure)



Recreation Message





Recreation Message

Have
fun!

Activity and Location?



Activity and Location?

What the public
health message
fails to address
is HOW and
WHERE

America's Public Lands and Waters: The Gateway to Better Health?

Gale Norton[†] & Michael Suk^{††}



Gateway to Better Health



Gateway to Better Health

A background image showing the lower bodies and legs of several children running across a lush green field. The children are wearing colorful clothing: one in a red shirt, one in an orange shirt and grey shorts, and one in a yellow shirt and pink skirt. The scene is bright and sunny, suggesting an outdoor activity like running or playing.

Hiking, biking and camping have the greatest longevity that any of the human powered outdoor activities

Gateway to Better Health

A background image showing the lower half of several children running on a green lawn. One child in the center wears an orange shirt and grey pants, another to the left wears a red shirt, and one to the right wears a yellow shirt. The image is slightly blurred to convey motion.

Hiking, biking and camping have the greatest longevity that any of the human powered outdoor activities

Climbing

Downhill skiing

Snowboarding


Kayaking

Cross-country skiing

Trail running

Snow shoeing

Volunteering

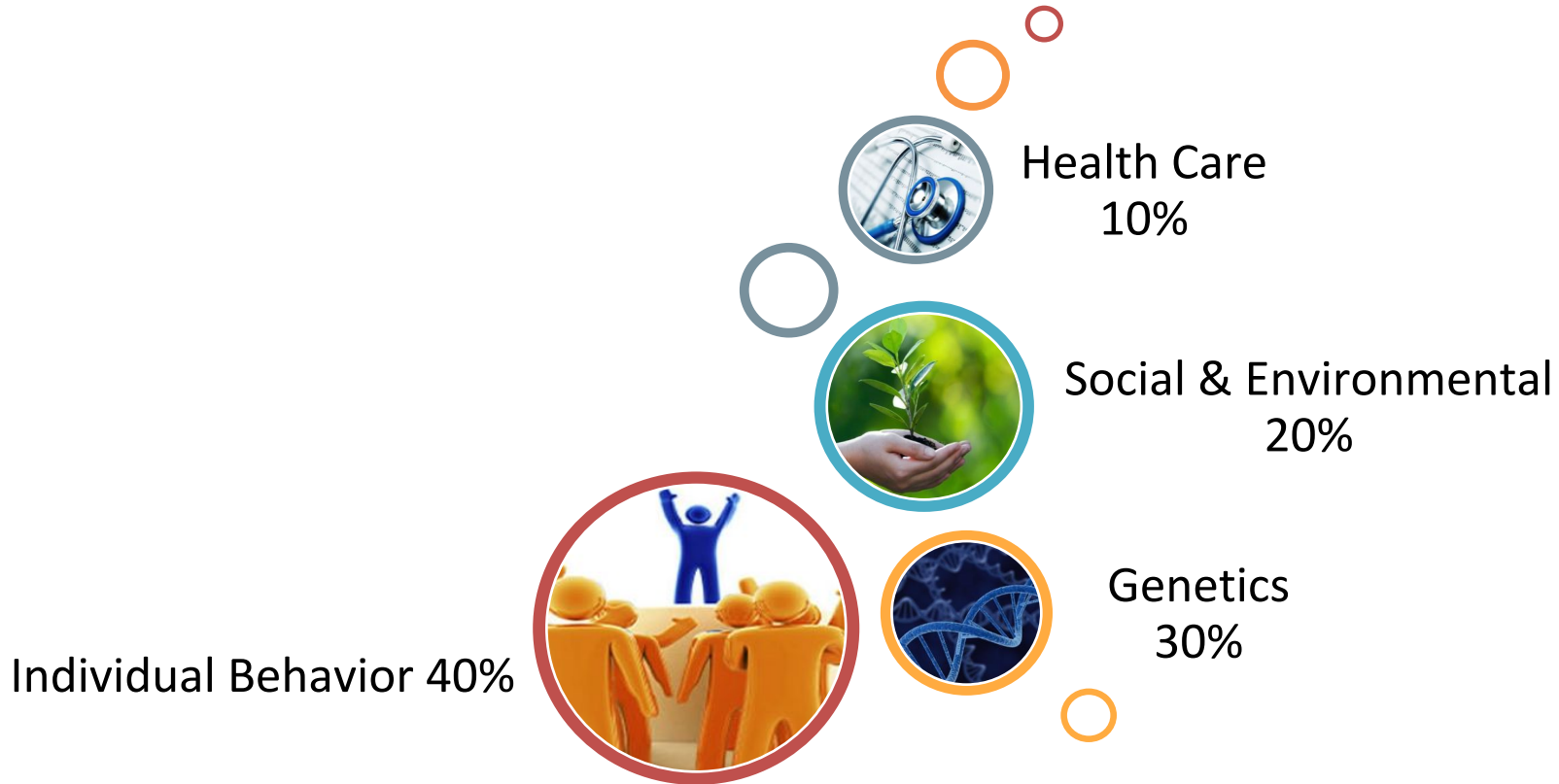
A group of children are lying on their backs on a white surface, looking up at the camera. Their hands are raised near their faces, with some fingers spread. They are wearing colorful clothing: a blue shirt, a green shirt, a blue shirt, a yellow shirt, and a red shirt. A semi-transparent circular overlay is centered over the image, containing white text.

90% of active
adult
participants
started between
the ages of 5
and 18

OPPORTUNITY



Components of Health and Wellness



Social Determinants of Health



Economic Stability

- Employment
- Income
- Expenses
- Debt
- Medical Bills
- Support



Neighborhood and Physical Environment

- Housing
- Transportation
- Safety
- Parks
- Walkability



Education

- Literacy
- Language
- Early childhood education
- Vocational training
- Higher education



Food

- Hunger
- Access to health options



Community and Social Context

- Social integration
- Support systems
- Community engagement
- Discrimination



Health Care System

- Health coverage
- Provider availability
- Provider linguistic and cultural competency
- Quality of care

Mortality

Morbidity

Life
Expectancy

Health Care
Expenditures

Health Status

Functional
Limitations

PARK PRESCRIPTIONS

Profiles and Resources for Good
Health from the Great Outdoors

Rx

MEDICAL CENTER

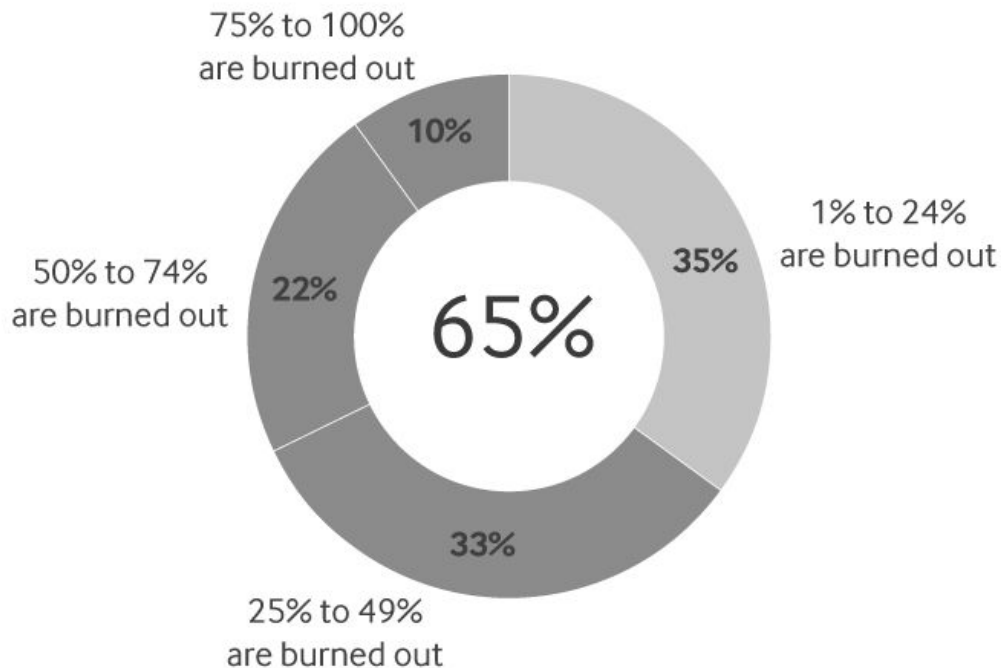


INSTITUTE
AT THE GOLDEN GATE

INSTITUTE AT THE GOLDEN GATE | GOLDEN GATE NATIONAL PARKS CONSERVANCY

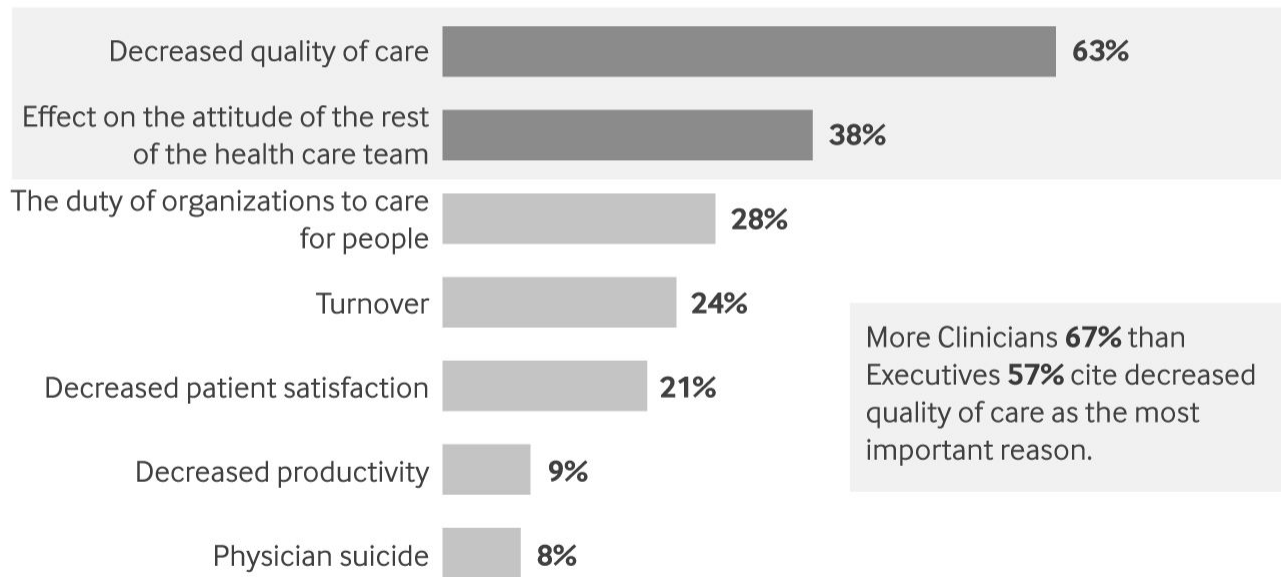
Physicians Need Nature Interventions

What percentage of the physicians you personally know are burned out?



Decreased Quality of Care is the Top Reason to Address Physician Burnout

What are the top two most important reasons to address physician burnout?



Approximately one physician
commits suicide per day in
the United States.



Opportunities in a shift toward value based care

- Longer term outcomes not immediately payable or easy to incent
 - Diabetes (paid for fewer doctor visits)
- Bundle lifestyle interventions
- MD not the sole leverage point – midlevels, nurses, case managers

How can State Offices of Parks and Recreation Provide Leadership for Nature Rx?

- Compiling best practices - Outdoor Rx Colorado
- Raise visibility for the “accords”
- Ensure inclusivity
- Collect and disseminate data





How do we incorporate
NatureRx as a benefit of
Health Insurance?

- Recognize the barriers to understanding health insurance
- Quality and patient experience metrics are the tests for physicians
 - Nature conversation should not interfere

The Opportunity

Bring healthcare providers, insurers, outdoor enthusiasts, public land managers and environmental stewards together for widespread solutions

Ride the SHIFT from individual medical treatment to communities focused on prevention

Recognize the common meaning of health and wellness

Questions & Discussion

Michael Suk

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Stay connected

Want to see the webinar again?

Webinar recording on YouTube: <https://bit.ly/2wISnOh>

Slide deck on Figshare: <https://figshare.com/authors/SHIFT/8502495>

Next webinar:

March 24, 2020 at 10 AM MT with Linda Hwang from Trust for Public Land



SHIFT announcements

- The Emerging Leaders Program is accepting applications. The deadline is May 24th at 11:59 PM PT. Contact: drmorgan@shiftjh.org
- Send us nominations for the SHIFT Awards. Self nominations are welcome. Nominations close May 19 at 11:59 PM PT. Main contact: arian@shiftjh.org
- The SHIFT Summit: Healthy by Nature will be October 14-16 in Jackson Hole, Wyoming
- Join our Slack Community: <https://bit.ly/2PJGYOZ>

Contact Arika Virapongse, webinar series coordinator at av@middlepatheco.com

www.shiftjh.org

