

*Nature and
children's play,
health &
well-being*



Pooja S. Tandon, MD, MPH
County Executive's Advisory Group on Land Conservation
9.26.16



Seattle Children's
HOSPITAL • RESEARCH • FOUNDATION

UW Medicine
SCHOOL OF MEDICINE

Children today may be the
first generation at risk of
having a shorter lifespan
than their parents



Seattle Children's
HOSPITAL • RESEARCH • FOUNDATION

UW Medicine
SCHOOL OF MEDICINE

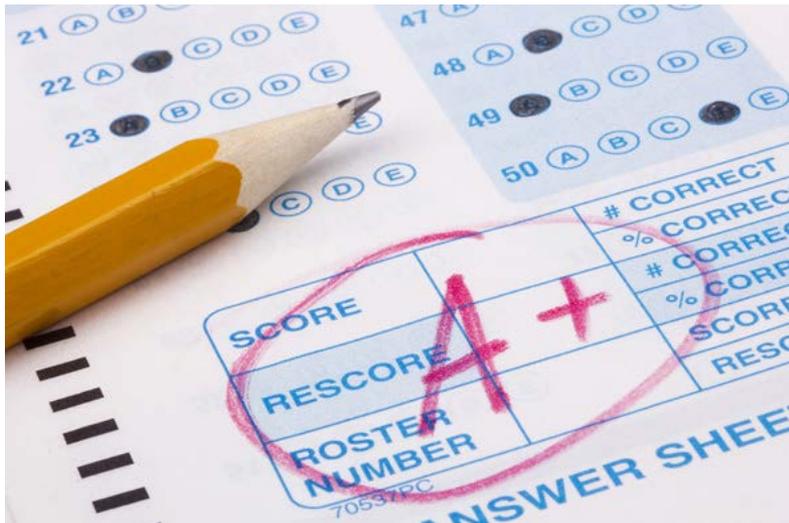
Changes to the landscape



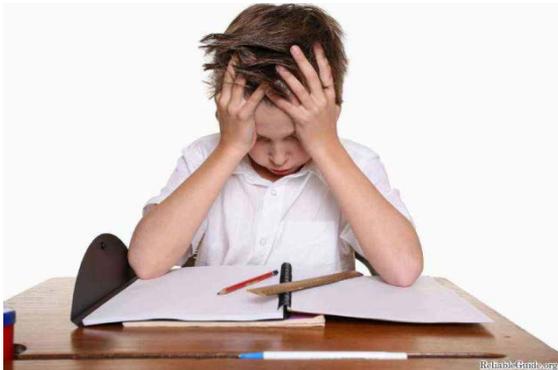
Seattle Children's
HOSPITAL • RESEARCH • FOUNDATION

UW Medicine
SCHOOL OF MEDICINE

Changes in lifestyle....and priorities?



How do these changes impact health & well-being?



Seattle Children's
HOSPITAL • RESEARCH • FOUNDATION

UW Medicine
SCHOOL OF MEDICINE

Health Benefits of Nature

- Increases physical activity
- Reduces childhood stress
- Coping tool for ADD/ADHD
- Developmental benefits:
 - Social, Cognitive, Emotional, Physical



Parks & Physical Activity

- Associations between healthy weight & availability of 13 specific parks within 1 km of residence
 - For children who lived within 1 km of park **with a playground**, children were **5 times** more likely to have a healthy weight

Parks & Physical Activity

- Larger study of 8 parks in Los Angeles
- Parks were in predominantly African American or Hispanic neighborhoods
 - Poverty range 13.8% to 47.3%
- 2000 individuals counted in each park
 - Vigorous activity associated with sports courts and playgrounds
- Proximity of residence predicts park use and physical activity
 - Those living < 1 mile away were more likely to use the park and had 38% more exercise sessions than those living farther away

Reduce Childhood Stress Results

- Nature appeared to act as a buffer to decrease stress in rural children
- Lower levels of stress in the child were noted with increased amount of exposure to natural environments
- The nature exposure effect was especially pronounced for children with the highest levels of stressful events
- Higher nature associated with positive self-worth

Effects of Nature on ADD/ADHD

- Outcome measure were 4 inattentive symptoms
 - Inability to stay focused on unappealing tasks
 - Inability to complete tasks
 - Inability to listen and follow directions
 - Being easily distracted
- Findings
 - Activities in natural settings were helpful in reducing inattentive symptoms
 - As tree cover in the setting increased, inattentive symptoms decreased

Effects of Nature on ADD/ADHD

- Nationwide study examined if “green” settings reduced symptoms of ADHD
 - Compared green outdoor after-school/weekend activities to activities in built indoor/outdoor settings
 - Findings: “green outdoor activities reduced symptoms significantly more than did activities conducted in other settings, even when matched across all settings”

American Academy of Pediatrics (AAP)

Parents should encourage children to play outside as much as possible

AAP Council on Sports Medicine and Fitness and Council on School Health. *Pediatrics* 2006;117:1834-1842.

Health and Nature Fact Sheets



FACT SHEET ADULT HEALTH AND NATURE

Current State of Adult Health

Adult populations in the United States are burdened by chronic diseases that lead to decreased quality of life, increased health care costs, and preventable morbidity and mortality. Many of these illnesses have a strikingly disproportionate impact on minority populations and those with low socioeconomic status.



More than one third of the population, or 149 million U.S. adults over age 20, is overweight or obese.^{1,2} Obesity is associated with increases in mortality rates and risk for widespread chronic illnesses, including type 2 diabetes, hypertension, high cholesterol, heart disease, stroke, respiratory illnesses, and some cancers.^{1,2} Type 2 diabetes is associated with shorter life expectancy and minority adults are twice as likely as white adults to be affected.³ More than 60 million Americans have hypertension and high cholesterol, much of which is uncontrolled.⁴ Cardiovascular disease affects 1 in 3, or more than 83 million, and heart attack and stroke are the first and third leading causes of death in the United States.⁴ Death rates are 37% higher among African Americans than whites and American Indian and Alaska natives have the highest percentage of premature death associated with cardiovascular disease.⁴ Asthma is another chronic illness on the rise that affects over 18 million, or 1 in 12, adults.⁵ Multi-race and black adults, women of all races, individuals with lower income and education levels, and those who are overweight are more likely to have asthma.^{5,6} Mental illness is also prevalent, affecting 25% of all U.S. adults, and can adversely affect the outcomes of other chronic illnesses.⁷

Lifestyle modification with medical management, diet, physical activity, and behavior therapy, including stress management, are recommended for the control of these conditions.^{3,4} Nature has long been used in cultures around the world as a form of healing and a way to foster good health. Research demonstrates that contact with nature benefits people of all ages and can positively impact health. Access to nature has been related to better health, greater physical and mental well-being, restoration from stress, and greater social connectivity.



FACT SHEET CHILDREN'S HEALTH AND NATURE

Current State of Children's Health

Our children may be the first generation at risk of having a shorter lifespan than their parents [1]. Sedentary lifestyle and physical inactivity have contributed greatly to the numerous health problems plaguing today's children. Chronic conditions such as childhood obesity, asthma, attention-deficit disorder, and vitamin D deficiency have all increased over the past few decades [2, 3]. These conditions may lead to pulmonary, cardiovascular and mental health problems in adulthood. Outdoor activity in the natural environment has taken a back seat to television, video games, the computer, and a demanding schoolwork and extracurricular schedule. Many low-income and minority children are often more cut-off from nature due to the 'built environment' around them: poor housing conditions, high-volume traffic, and a lack of parks and green space [4]. While losing contact with the natural environment, today's youth are missing key opportunities for physical activity, stress reduction, attention restoration, and healthy development.



Childhood Obesity

Approximately 17% of children ages 2-19 years are obese and an additional 14.8% are considered overweight [5].¹ According to the Institute of Medicine, childhood obesity has doubled over the past 30 years for preschoolers and adolescents, and more than tripled for children aged 6-11 years old [6].

Disparities in childhood obesity are also rising. Approximately 38.2% of Hispanic children ages 2-19 years are overweight or obese, compared to 29.3% of white children. In addition, 35.9% of African American children ages 2-19 years are overweight or obese [5]. However, prevalence of childhood obesity has increased at all income and education levels [7].

¹ Overweight= BMI \geq 85th percentile and \leq 95th percentile; childhood obesity = BMI \geq 95th percentile. BMI = Body-mass index; calculated using the formula: weight (lb) / [height (in)]² \times 703. To calculate BMI, visit <http://apps.nccd.cdc.gov/dnpabmi/Calculator.aspx>.

- Summarizes key scientific studies on the health benefits of nature across the lifespan

<https://www.neefusa.org/resource/children's-health-and-nature-fact-sheet>
<https://www.neefusa.org/resource/adult's-health-and-nature-fact-sheet>

Considerations & Implications

- Proximity of nature & access
- Disparities & Environmental justice
- Cross-cultural perspectives
- Opportunities for experiential learning (STEAM)
- Inspiration & future stewardship

*This presentation borrowed/adapted slides from a presentation
that was developed by:*

James Roberts, MD, MPH

Joel Forman, MD

Sophie Balk, MD

Leyla Erk McCurdy, MPhil



Thank you!



Contact: pooja@uw.edu



Seattle Children's
HOSPITAL • RESEARCH • FOUNDATION

UW Medicine
SCHOOL OF MEDICINE