

CATALINA HOYOS, MD

UPMC CHILDREN'S COMMUNITY PEDIATRICS, GIL

Child Development

Def. The physical, intellectual, social, and emotional changes that occur from birth through the end of adolescence.





Case 1

EC is a healthy 6-year-old child

Nature and Stress Reduction

- Exposure to nature decreases perceived stress or is a buffer for daily stress in children.¹
- Exposure to green school yards is associated with less perceived stress and improved ability to focus and form supportive social groups.²
- A qualitative study using the Strengths and Difficulties Questionnaire showed that high quantity and quality green space was associated with fewer difficulties and improved peer relationships.³

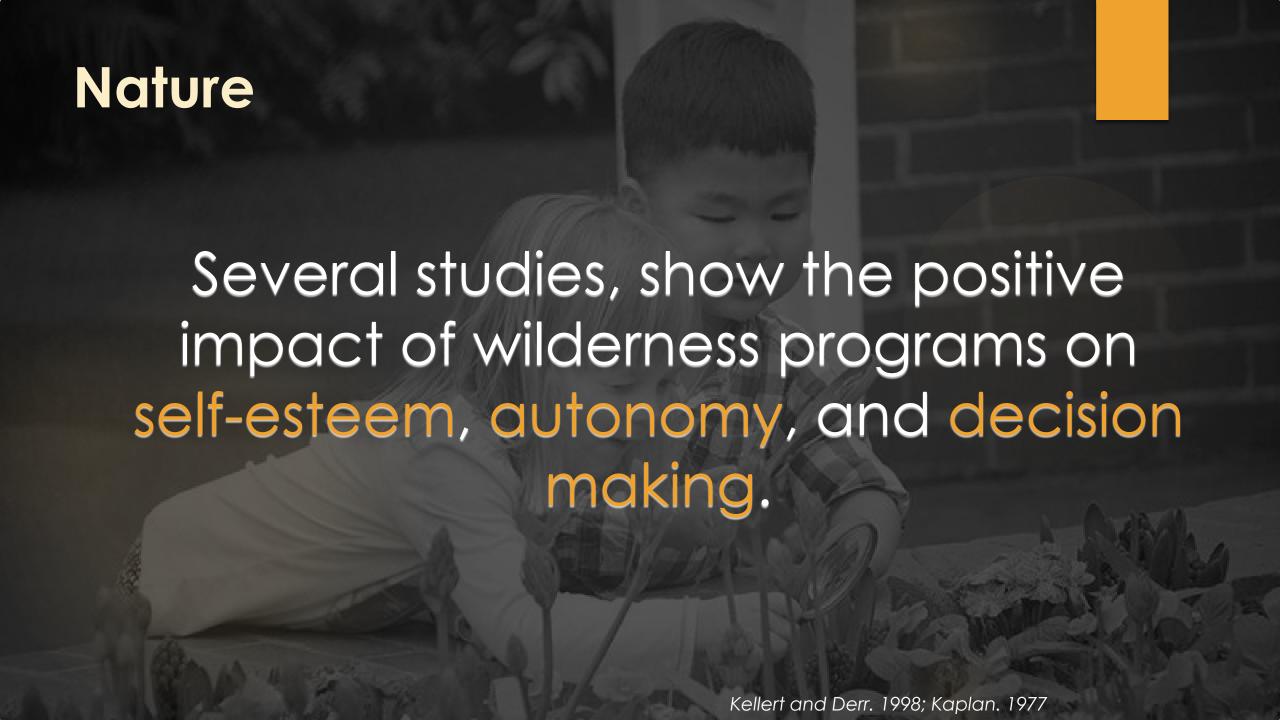
²Chawla et al. Health and Place. 2014.

³Amoly et al. Environmental Health Perspectives. 2014.

Greater time spent by adults nearby to nature improved mental and social health.¹

Residents in greener neighborhoods reported less depression and more connectedness to nature.¹





CASE 2

RJ is a 14 year old boy who was overweight and lost 20 pounds in the last 2 years



Nature and Physical Activity

- Physical activity improves health outcomes including adiposity and cardio-vascular health.¹
- Nature play positively impacts physical activity in children, although it may not differ from traditional play spaces.²
- The prevalence of being overweight was up to 41% lower among those children spending more time outdoors at baseline.³

¹Strong et al. Journal of Pediatrics. 2005.

²Dankiw et al. Plos One. 2020

³Cleland et al. Int Journal of obesity. 2008

Case 3: JM

- JM is a 14-year-old boy with obesity asthma, ADHD and a history of truancy and marijuana use
- JM's mother, who has a history of mental health issues and has overcome substance abuse, is focused on treating him in a holistic approach, including going out for walks in nearby parks

Can nature help JM?

THE MORE THEY BURN THE BETTER THEY LEARN



AMOUNT OF ACTIVITY

VARIOUS ACTIVITIES

ACADEMIC ACHIEVEMENT

Did you know that kids who are physically active get better grades? Research shows that students who earn mostly As are almost twice as likely to get regular physical activity than students who receive mostly Ds and Fs.

Physical activity can help students focus, improve behavior and boost positive attitudes. Do what you can to help your child be physically active, be it running, biking or swimming. Any type of physical activity is good, and 60 minutes a day is best. Their grades will thank you!



FOR MORE INFORMATION, VISIT MakingHealthEasier.org/Burn2Learn

CDC. Physical Inactivity and Unhealthy Dietary Behavior

CDC. The association between school based physical activity, including physical education, and academic performance, Atlanta, GA: U.S. DHHS: 2010.

Nature and ADHD

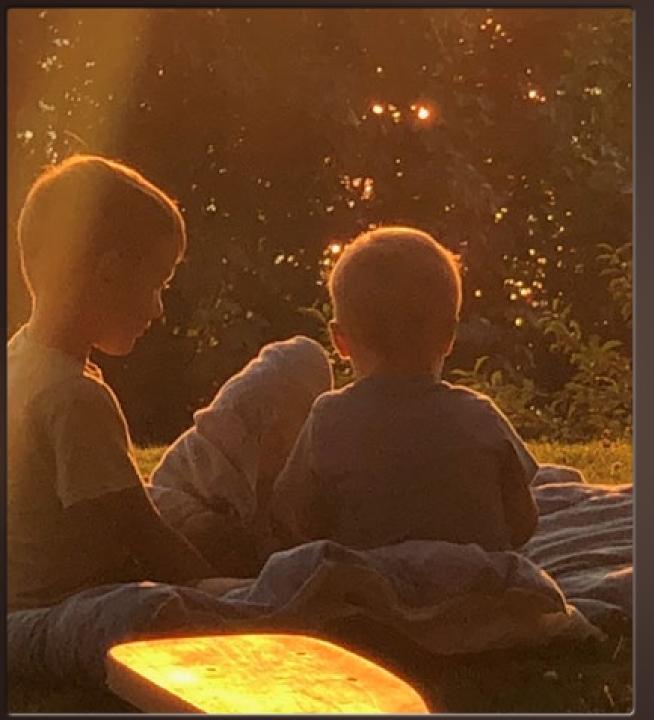
Children with ADHD score higher on attention testing after a 20 min walk in the city park vs two other urban settings¹

Green outdoor settings seem to reduce ADHD symptoms in children²





In children with behavioral issues, parents reported less problem behaviors after a therapeutic outdoor program

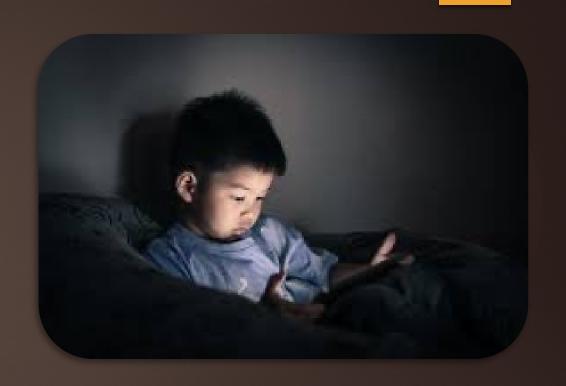


Nature and mental health

Greater exposure to nature is associated with lower maternal reports of conduct issues, anxiety and depression

Case 4:

MR is an 8-year-old boy with Type 1 Diabetes and Autism. He is nonverbal and his behaviors are difficult to manage. He spends over 4 hours per day on a screen.



Parents and caregivers of children with autism reported motor-sensory, emotional, and sensory benefits from contact with nature.

Limitations of The Evidence

- Studies must often rely on interpretation or caregiver reports
- Participants often want to support the program
- Participants are often self selected
- Activity vs environment
- Small sample sizes
- Variety of study designs

Action points

- Go outside, enjoy nature, <u>wander and wonder</u>
- Encourage children in your life to explore nature and to be curious;
 show them you care about them and nature
- Keep nature accessible by partnering with local organizations and institutions
 - local schools and parks
 - Phipps Conservatory and Botanical Gardens
- Protect and expand existing nature
 - o pick up trash at local park or on your next hike
 - join groups going out to maintain trails
 - write to your government officials, **vote**



Thank You

Catalina.Hoyos@chp.edu

