The Impact of Nature on Child Development: A review of the evidence through the lens of a local pediatrician

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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

¹Wells and Evans. Environment and Behavior. 2003
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

Several studies show the positive impact of wilderness programs on self-esteem, autonomy, and decision making.

Kellert and Derr. 1998; Kaplan. 1977
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.\(^3\)

\(^2\) Dankiw et al. Plos One. 2020
\(^3\) Cleland 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?
Nature and ADHD

Children with ADHD score higher on attention testing after a 20 min walk in the city park vs two other urban settings\(^1\)

Green outdoor settings seem to reduce ADHD symptoms in children\(^2\)

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, wander and wonder
- 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
  - 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

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