

Nature time

Evidence for why kids need it,
and how to achieve it
in a fast-paced world

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Children's *physical* environments

Supporting development?

Physical environments & children's healthy development

Remember the languishing bean seed...?





Kids are always growing,

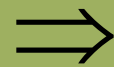
whether their physical environments are

supporting them *or not*

Contact with nature & children's healthy lifestyles

Supportive

physical
environment



Healthy

day-to-day
functioning



Healthy

development
into young
adults

Children's healthy lifestyles

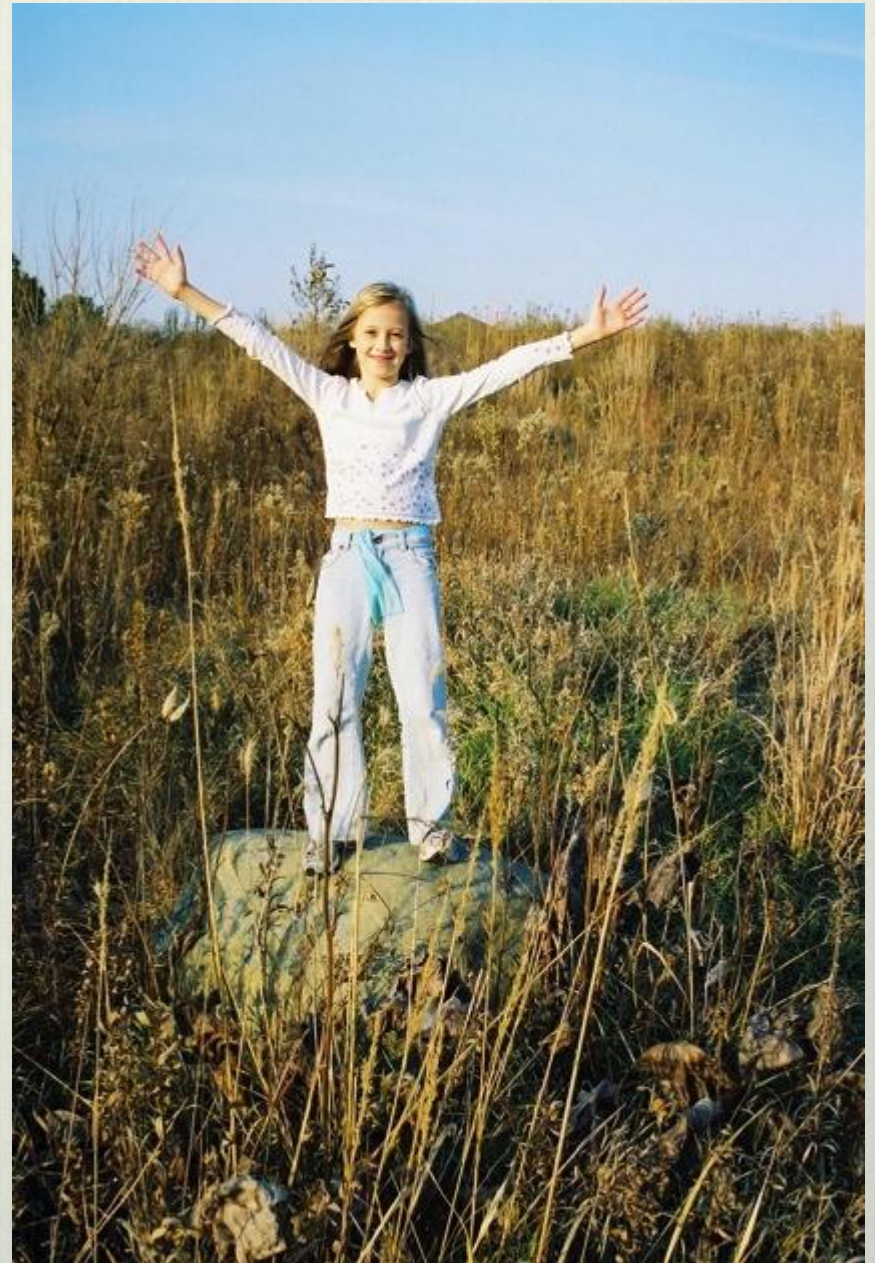
How can communities foster healthy day-to-day functioning in children?

Children's healthy lifestyles

How can communities foster healthy day-to-day functioning in children?

Provide frequent contact with nature
(greenspace)

Children
need contact
with nature



Children and greenspace

Greenspace as accessory?

Or....

Greenspace as *necessity*

Why greenspace is a necessity

overview

Overview

Why greenspace is a necessity

1. Why does nature help?
2. What we studied
3. What we found
4. What this means for families and communities

Why does nature help?

Why does nature help?

Attention

Restoration

Theory

being in nature is mentally
restorative



Attention Restoration Theory

We need to frequently restore
attention from fatigue

Theory

Two types of attention

Directed attention

Involuntary attention

Theory

Directed Attention (*effortful*)
necessary for daily activities

Theory

Directed Attention (*effortful*)
necessary for daily activities

Involuntary attention (*easy*)
watching fire, moving water,
wildlife



Nature can foster...

mental restoration in **fatigued parents, teachers**

mental restoration in **fatigued children, students**

mental restoration . . . translates into

- ❖ improved responding to children's needs
- ❖ improved focus and learning

What we studied

What we studied

Day-to-day functioning

Self-discipline

Concentration

Impulse control

Delay of gratification



What we studied

Day-to-day functioning

Self-discipline

Concentration

Impulse control

Delay of gratification

Play and creative forms of play



What we studied

Day-to-day functioning

Self-discipline

Concentration

Impulse control

Delay of gratification

Play and creative forms of play

Access to / interaction with adults



What we studied

Day-to-day functioning

Self-discipline

Concentration

Impulse control

Delay of gratification

Play and creative forms of play

Access to / interaction with adults

ADHD symptoms



What we studied

Greenspace

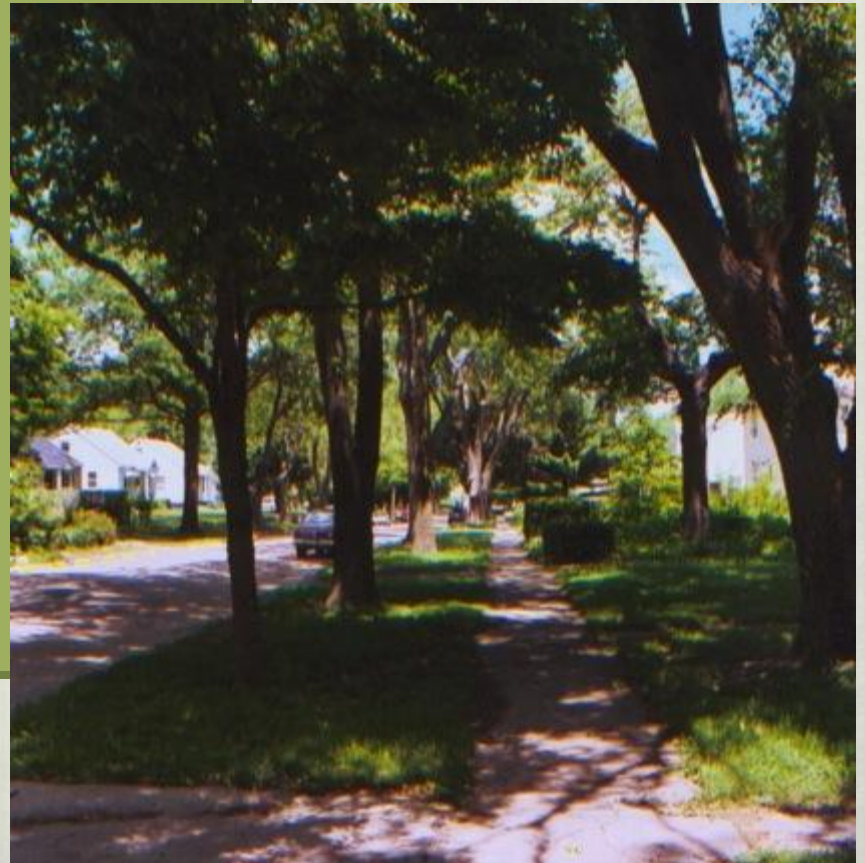
Tree cover

Grass cover

Residential space greenness

Play space greenness

Activity setting greenness



What we studied

Greenspace

Private spaces (e.g., private residential yard)

Public / common spaces (e.g., public housing courtyard)

Greenness of space around home

Greenness of views from home

What we studied

Techniques

Performance measures

Parent ratings

Raters blind to hypothesis

Within and Between Subjects design

Statistical testing

Testing for alternative mechanisms

Many participants

Many settings

High vs. low green conditions

Conditions otherwise identical

What we found

What we found

Greenspace & healthy functioning

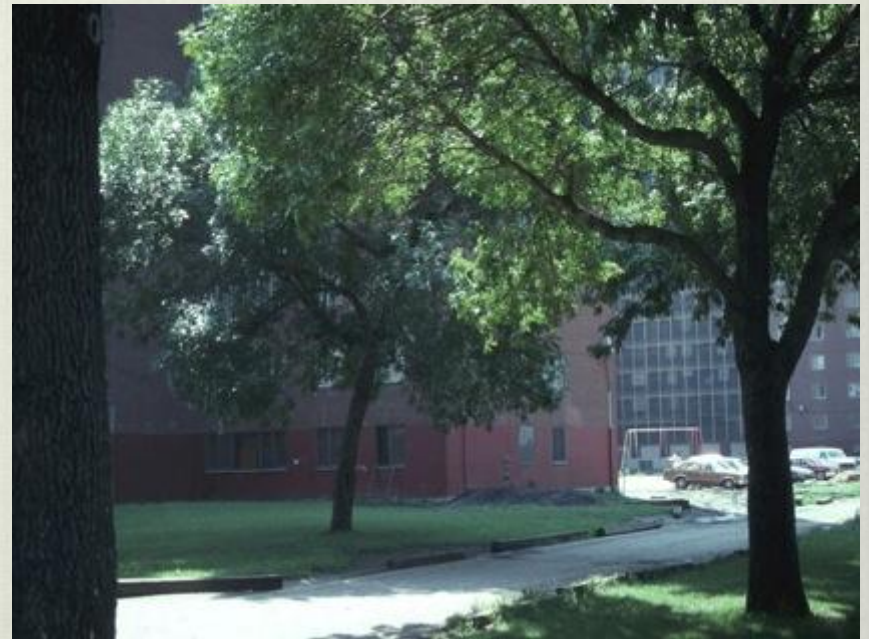
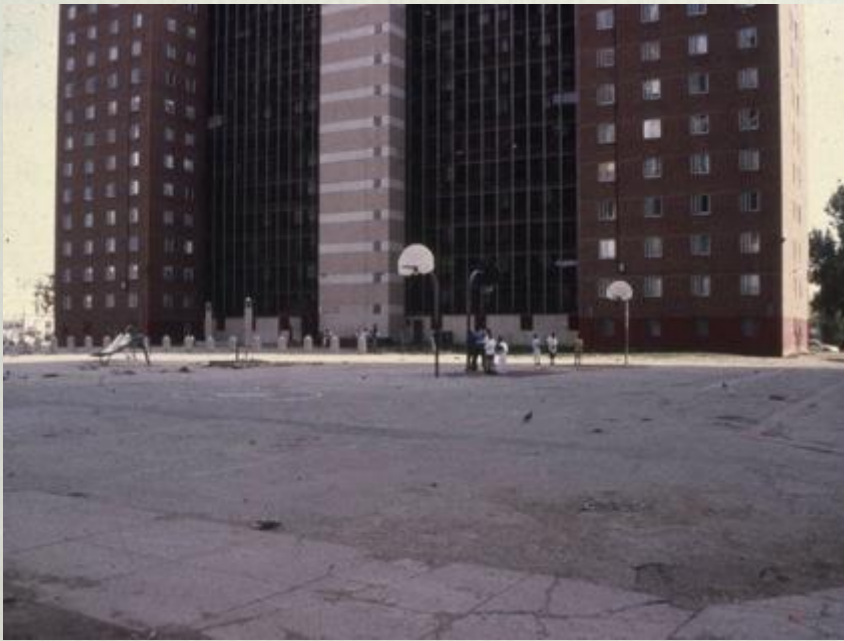
Findings:

- Statistically significant
- Build on theory (*Attention Restoration Theory*)

What we found

Barren & green courtyards

Chicago Public housing



What we found

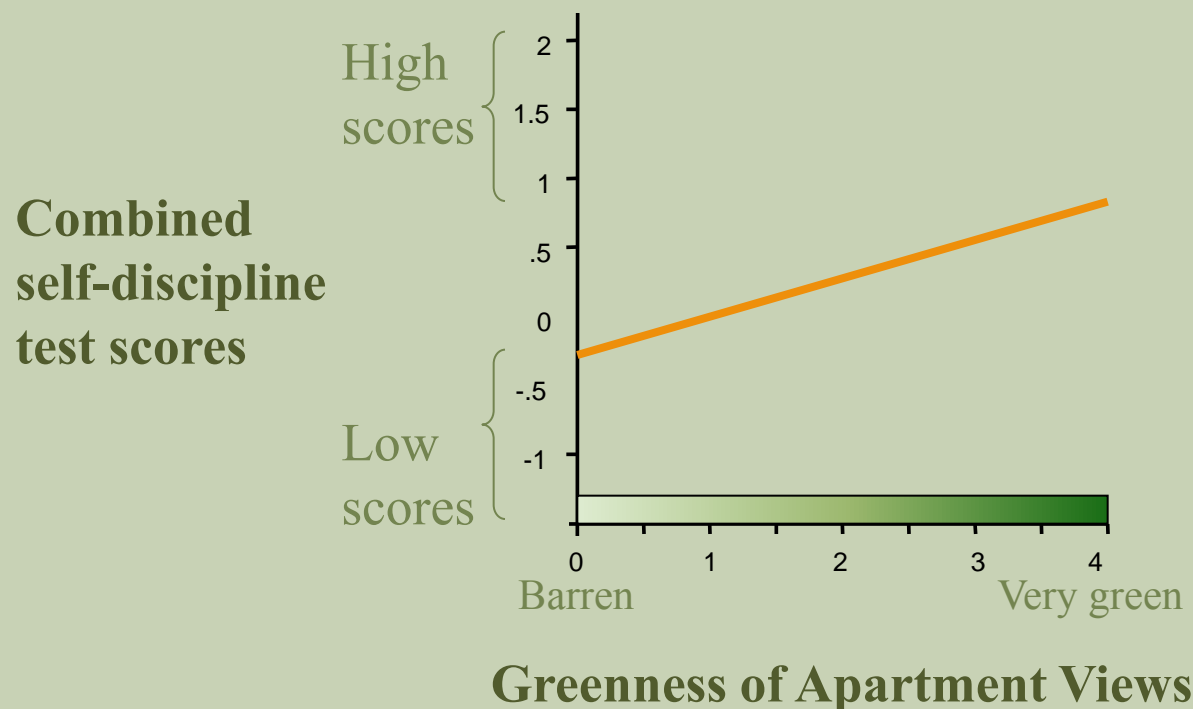
Greenspace & healthy functioning

**The greener the view
the greater girls' self-discipline**

Faber Taylor, A., Kuo, F.E., Sullivan, W. (2002) *Journal of Environmental Psychology*

What we found

Greenspace & healthy functioning



What we found

Greenspace & healthy functioning

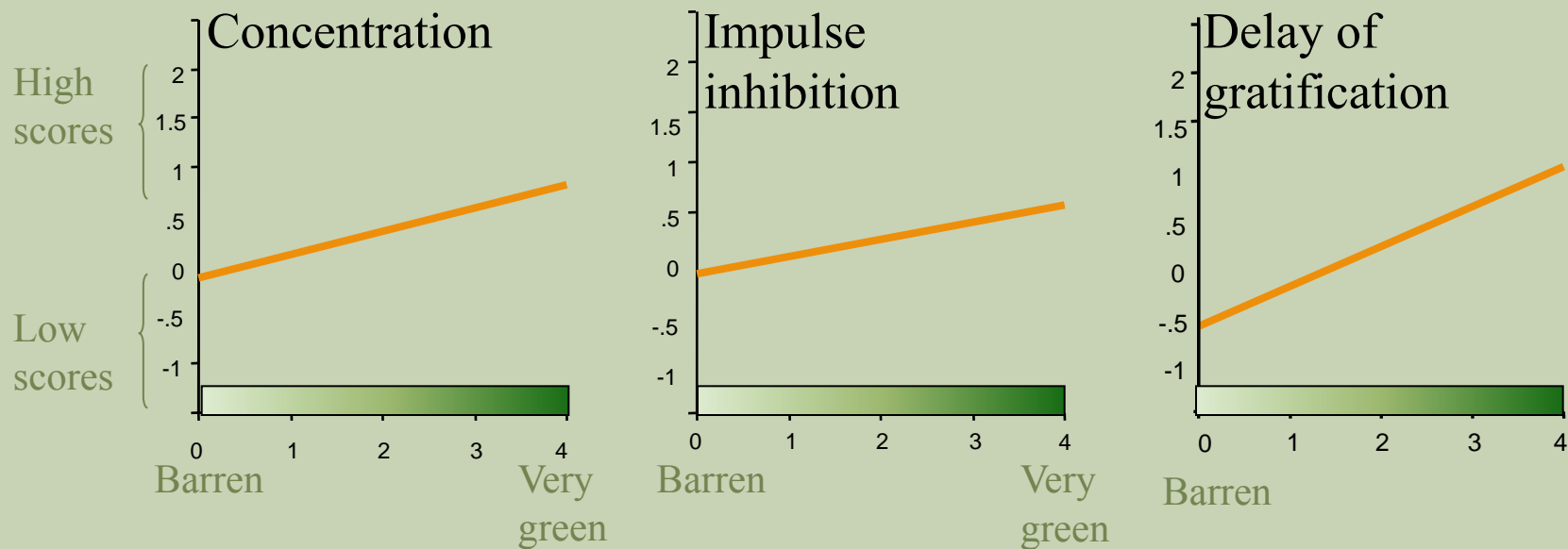
On average, the greener a girl's view from home:

- ❖ the better she concentrates
- ❖ the less she acts impulsively
- ❖ the longer she delays gratification

7-12 years old

What we found

Greenspace & healthy functioning



Greenness of Apartment Views

What we found

Green & barren courtyards

Chicago Public housing



What we found

Greenspace & healthy functioning

Green common spaces:

- ❖ 2 x as much play
- ❖ more creative play
- ❖ No difference in other activities

Inner city, low SES, ages 3-12

Faber Taylor, A. Wiley, Kuo, Sullivan, (1998) *Environment & Behav.*

What we found

Greenspace & healthy functioning

Green common spaces: more
accessible adults

Inner city, low SES

Faber Taylor, A. Wiley, Kuo, Sullivan, (1998) *Environment & Behav.*

What we found

Greenspace & healthy functioning

Children with ADHD – Midwestern U.S.

What we found

Play environments



“Places where there are big trees and grass”

What we found

Play environments



“Places indoors where it feels very much indoors”

What we found

Greenspace & healthy functioning

Frequent play less severe
greener spaces ADHD symptoms overall

Children with ADHD - Midwestern U.S.

7-12 years old

What we found

Greenspace & healthy functioning

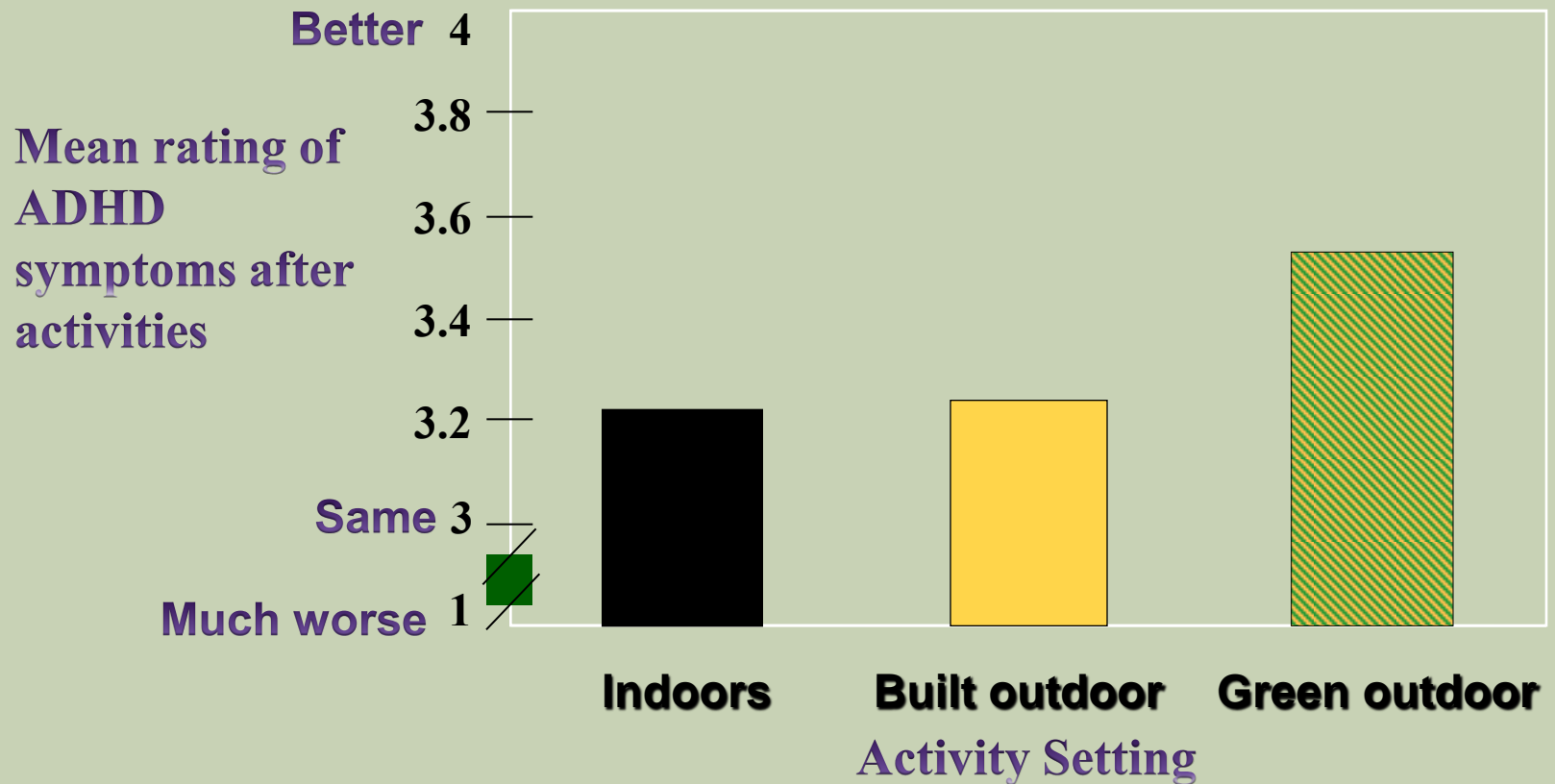
Activities in green settings □ reduced ADHD symptoms

Post-activity

Children with ADHD - Midwestern U.S.

What we found

Greenspace & healthy functioning



What we found

Greenspace & healthy functioning

Children with ADHD - **Nationwide U.S.A.**

(over 450 participants)

What we found

Greenspace & healthy functioning

Frequent play less severe
greener spaces ADHD symptoms overall

Children with AD/HD - **Nationwide U.S.A.**

Faber Taylor, A., & Kuo, F. (2011) *Applied Psych: Health & Well-being*

What we found

Greenspace & healthy functioning

Children who typically play in greener spaces
have less severe ADHD symptoms overall...

Even when family income level is controlled

Children with ADHD - **Nationwide U.S.A.**

What we found

Greenspace & healthy functioning

Activities in green settings □ reduced ADHD symptoms

Post-activity

Children with AD/HD - **Nationwide U.S.A.**

What we found

Green activity settings related to better attentional functioning

❖ Regardless of:

Community size (rural to large city)

Region of the U.S.

Gender

Age (5-18)

Severity of symptoms

What we found



Field study –

Controlled walks through

- ❖ park
- ❖ neighborhood
- ❖ downtown

What we found

After a walk in PARK

higher scores - measure of attention

than after neighborhood or downtown walks

What parents say...

Greenspace & healthy functioning

“...my son can fish for hours and afterwards his symptoms are hardly noticeable.”

- parent of child with AD/HD

What parents say...

“...two weeks camping in a pop-up camper is just bliss. We have a great time. He’s great.”

- parent of child with AD/HD



What we found



Summary

| Trees / greenspace | Healthy functioning | Populations |
|---|--|---|
| Views from apartment Overall home greenness Play space greenness Public/common space greenness Activity setting greenness | 'Self discipline' Concentration Impulse control Delay of gratification Play & creative play Adult supervision Reduced AD/HD symptoms | Low SES Middle SES Upper SES Children with AD/HD Children with regular attention function |

Acknowledgements

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University of Illinois



Summary others' research

Nature - health link in children

- ❖ Residential nature - **attentional functioning** (Wells, N.)
- ❖ - **coping with stressors** (Wells, N. & Evans, G.)
- ❖ – **lower obesity** (Liu, et al.)
- ❖ Daycare nature - **attentional functioning** (Grahn, P.)
- ❖ Schoolyard nature – **better outcomes high school** (Matsuoka, R.)
- ❖ Childhood experiences with nature (bonding) –
more **pro-environmental BEHAVIORS** as adults (Wells, N. & Lekies, K. 2006; Chawla, L. 2007)

Summary

Trees / greenspace support:

- Healthy day-to-day functioning
- Healthy development & outcomes



What this means

Implications for families, educators, and the rest of us...

What this means

Trees / green space -

a *necessity* for supporting
children's healthy development

A necessity for children's healthy development

Kids today...

- ❖ Playing outdoors less (Hofferth & Curtin, 2006; Clements, 2004)
- ❖ More *screen time*? (what got replaced?)
- ❖ Other deterrents (access, schedules, fear)

A necessity for children's healthy development

Children's nature time IS valuable.

It DOES make a measurable difference.

Avoid allowing it to fall by the wayside
in our pursuit of “activities” and electronic
media

A necessity for children's healthy development

Even a few trees and grass make a difference in harsh environments

A necessity for children's healthy development

We can't "fix" all the stressors
families endure...

... we CAN put ourselves
in supportive
environments



What this means

Findings suggest **daily “doses”** of green space
beneficial

- ❖ Need to educate families & caregivers
- ❖ Need to educate communities

Put greenspace where kids are *GROWING*

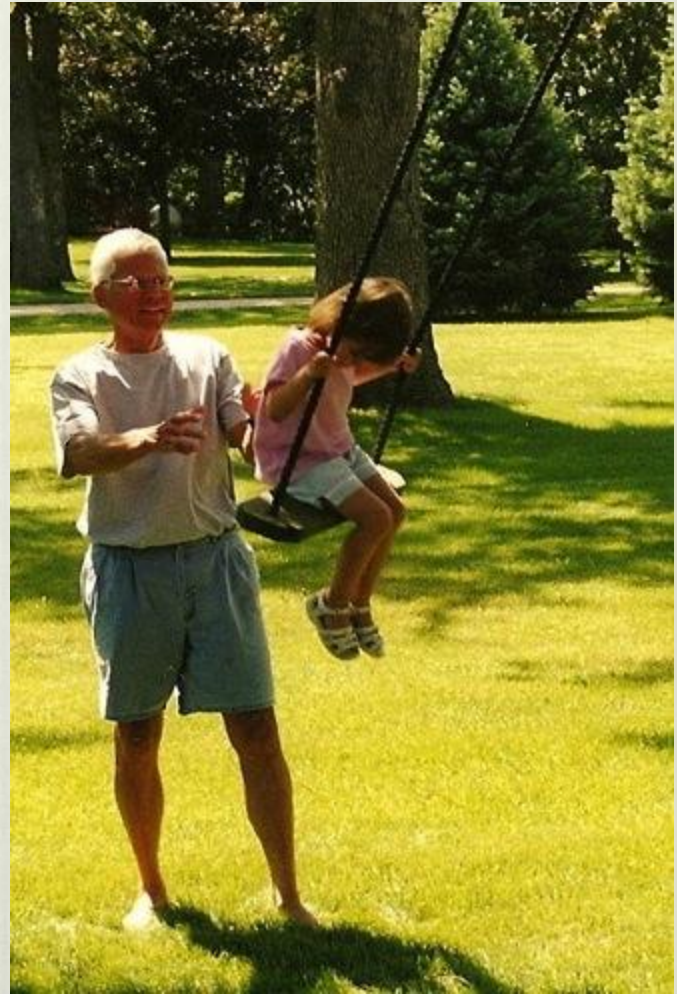
- ❖ Schools / Daycare
- ❖ Residential
- ❖ Public spaces



Choose green spaces
for play and relaxation



Parents need
contact with
nature too



Form new
habits -
parents be a
model



Explore together

look for insects

rocks & shells

nuts & leaves



Let curious
minds
wander...



Raise the
priority in the
scramble for
“time”



Even in
winter,
nature
may help



Provide
some
props



Overcome
obsession
with
cleanliness



“There is no
bad weather,
...just bad
clothing”

Scandinavian saying



Where children grow...

“Green” schoolyards and daycare centers

- ❖ for recess
- ❖ class activities
- ❖ outdoor learning
- ❖ within view from classroom, cafeteria?

“Green” schoolyards and daycare centers

Time in greenspace = happier, healthier teachers and students

Some resources

The Children and Nature Network

www.cnaturenet.org

Our research

www.lhhl.illinois.edu

Prairie plants feed imagination...





