

# How Does Being Outside in a Natural Area Affect Kids?

*Natural areas exclude mowed lawns, manufactured play equipment, asphalt or concrete surfaces, and controlled sport events.*

Being outside in a natural area has benefits.

### Benefits:

- May reduce symptoms of ADD and ADHD
- More muscle mass and less obesity
- Increased social interaction and cooperation
- More familiar with own “place”
- More likely to play with people from other cultures
- Decreased crime
- Less depression in children and adults
- More absorption of Vitamin D (which raises immunity against disease)
- Less exposure to indoor allergens and toxins
- Increased creativity
- Improved test scores in reading, math, science, social studies
- Reduced stress
- Increased self-confidence and feelings of self-worth
- Increased ability to focus on specific tasks when indoors
- Time to reflect, both emotionally and spiritually

Like any activity, there are some barriers to taking children outside.

Barriers	Strategies
Stranger Danger	One abduction is too many. But it’s really no worse than it was in the 50s. It’s just that today, one abduction is repeated multiple times in the news media, so it <i>feels like</i> there are a lot more than there really are.
Ticks	Ticks live primarily in tall grass. Tuck your socks into your pants. If you find a tick, pinch it off as close to the skin as possible and pull quickly. If desired, you can also apply liquid soap to it. It will detach.
Mosquitoes	Wear long-sleeved lightweight clothing. Apply DEET to clothing, not skin.
Overdeveloped play areas	Leave a part of your lawn undeveloped (dirt piles, logs, sticks), or steer children to the wild edges of play areas.
Fear of the unknown (plants, animals, getting lost, etc.)	We all fear the unknown. Bring a friend who is confident being outdoors. The more you’re outside, the more you’ll learn about plants & animals. Often, there are far more dangers indoors than out!
Traffic	Avoid traffic areas. When children are playing in the yard, put out lawn chairs or orange traffic cones along the shoulder of the road.
Weather	Dress for it. If it’s cold, wear a hat. If it’s raining, wear rain boots and raincoat.
Adult caregiver doesn’t enjoy being outside	Dress for it. Bring a friend. Bring snacks, water, and an inquisitive child. Getting comfortable takes practice, but humans are hard-wired to enjoy being outside. Let your inquisitive children inspire you.

## Do the benefits outweigh the barriers?

**You decide!**

The next several pages list scientific research and articles to help you think about how you might decide what’s best for your child.

## **Childhood Development**

### **Direct Experience in Nature Is Critical and Diminishing**

Nature is important to children's development in every major way—intellectually, emotionally, socially, spiritually, and physically. "Play in nature, particularly during the critical period of middle childhood, appears to be an especially important time for developing the capacities for creativity, problem-solving, and emotional and intellectual development." Designers, developers, educators, political leaders and citizens throughout society are urged to make changes in our modern built environments to provide children with positive contact with nature—where children live, play, and learn. *Kellert, Stephen R. "Nature and Childhood Development." In Building for Life: Designing and Understanding the Human-Nature Connection. Washington, D.C.: Island Press, 2005.*



### **Unstructured Free Play Brings Cognitive, Social and Health Benefits**

Unstructured free play in the outdoors brings a host of benefits to children—from being smarter to more cooperative to healthier overall, for all age groups,

especially young children. The concept of “play” is more compelling and inviting to most adult caregivers, parents and guardians than “exercise.” The authors cite cognitive benefits from play in nature, including creativity, problem-solving, focus and self-discipline. Social benefits include cooperation, flexibility, and self-awareness. Emotional benefits include stress reduction,

reduced aggression and increased happiness. Children will be smarter, better able to get along with others, healthier and happier when they have regular opportunities for free and unstructured play in the outdoors. *Burdette, Hillary L., M.D., M.S.; and Robert C. Whitaker, M.D, M.P.H. "Resurrecting Free Play in Young Children: Looking Beyond Fitness and Fatness to Attention, Affiliation and Affect." © 2005 American Medical Association.*

### **Direct Experience and Mentoring Are Key Elements**

The focus of this recent research is factors that may cause individuals to act in ways that benefit the environment when they become adults. Positive, direct experience in the outdoors and being taken there by someone close to the child—a parent,

grandparent, or other trusted guardian—are the two most significant contributing factors. "The very fact that a parent or grandparent chose to take the child with them to a place where they themselves found fascination and pleasure, to share

what engaged them there, suggests not only care for the natural world, but, equally, care for the child." *Chawla, Louise.*

*"Learning to Love the Natural World Enough to Protect It," in Barn nr. 2 2006:57-58. © 2006 Norsk senter for barneforskning.*

## **Outdoor Learning Enhances School Achievement, Self-Esteem and Self-Discipline**

### **Nature-Smart Kids Get Higher Test Scores**

"Effects of Outdoor Education Programs for Children in California." American Institutes for Research: Palo Alto, CA: 2005.

## **Environmentally Based Learning Enhances School Achievement and Civic Responsibility**

### **School Achievement Is Enhanced When Curricula Are Environmentally Based**

This study provides further evidence to support the positive benefits on school achievement from environmentally based study in schools. Students in such programs score as well or better on standardized measures in four basic subject areas—reading, math, language and spelling. The environmentally based programs also foster

cooperative learning and civic responsibility, using the natural characteristics of the school grounds and local community as the foundational framework for the curricula.

*"California Student Assessment Project Phase Two: The Effects of Environment-Based Education on Student Achievement." SEER: Poway, CA, 2005. [www.seer.org](http://www.seer.org)*



This preschool does story time outside

## **Naturalized School Grounds Enhance Creativity, Self Discipline, Health and Academic Achievement**

### **Green School Grounds Foster Achievement and Responsibility**

There are several studies that document the benefits to students from school grounds that are ecologically diverse and include free-play areas, habitat for wildlife, walking trails, and gardens. This study is concerned about obesity in children, and documents results and benefits beyond weight loss. Children who experience school grounds with diverse natural settings are more physically active, more aware of nutrition, more civil to one another, and more creative. *Bell, Anne C.; and Janet E. Dymont. "Grounds for Action: Promoting Physical Activity through School Ground Greening in Canada." © 2006 Evergreen.*

### **Naturalized School Grounds Benefit Children and Communities**

*"Nature Nurtures: Investigating the Potential of School Grounds." © 2000 Evergreen. Available online at [www.evergreen.ca](http://www.evergreen.ca)*

### **There Are More Benefits from Naturalized Playgrounds and School Grounds**

*White, Randy. "Young Children's Relationship with Nature: Its Importance to Children's Development & the Earth's Future."*

*Research compiled by Minnesota Project Learning Tree, from the Children and Nature Network [www.childrenandnature.org/research/](http://www.childrenandnature.org/research/)*

### **Schoolyard Habitat Projects Bring Natural Benefits to School and Students**

This article is a short, succinct summary of the natural benefits afforded from schoolyard habitat projects.

*Rivkin, Mary. "The Schoolyard Habitat Movement: What It Is and Why Children Need It." Early Childhood Education Journal. Volume 25, No. 1, 1997. Available on the National Wildlife*

### **Natural Settings Provide Psychological Benefits**

"Coping with ADD: The Surprising

Connection to Green Play Settings," explores the idea that contact with nature has a positive effect in reducing the impact of ADD in children. The study tested two hypotheses: 1) Attention deficit symptoms will be more manageable after activities in green settings

than after activities in other settings; and 2) The greener a child's everyday environment, the more manageable their attention deficit symptoms will be in general. The results were positive.

*Taylor, Andrea Faber; Frances E. Kuo; and William C. Sullivan. In Environment and Behavior, Vol. 33, No. 1, January 2001. © 2001 Sage Publications, Inc.*

[www.lhhl.uiuc.edu](http://www.lhhl.uiuc.edu)



Log balance beam. Cost: \$0.  
Experience: priceless

### **Access to Nature Nurtures Self-Discipline**

This study focuses on the positive benefits to inner city youth, particularly girls, from access to green spaces for play. Even a view of green settings enhances peace, self-control, and self-discipline. *Taylor, Andrea Faber; Frances E. Kuo; and William C. Sullivan. "Views of Nature and Self-Discipline: Evidence from Inner City Children." Journal of Environmental Psychology, 21, 2001. © 2001 Academic Press. [www.lhhl.uiuc.edu](http://www.lhhl.uiuc.edu)*

### **Nearby Nature Reduces Stress in Children**

Further, the more plants, green views and access to natural play areas, the more positive the results. *Wells, N.M., and Evans,*

*G.W. "Nearby Nature: A Buffer of Life Stress Among Rural Children." Environment and Behavior. Vol. 35:3, 311-330.*

### **Nearby Nature Boosts Children's Cognitive Functioning**

Proximity to, views of, and daily exposure to natural settings increases children's ability to focus and therefore enhances cognitive abilities. *Wells, N.M. "At Home with Nature: Effects of 'Greenness' on Children's Cognitive Functioning." Environment and Behavior. Vol. 32, No. 6, 775-795.*

## **Design Places for Learning and Living with Children in Mind**

### **Design Cities Where Children Can Play and Learn Independently**

Churchman, Arza. "Is There a Place for Children in the City." *Journal of Urban Design, Volume 8, No 2, 99-111, June 2003.*

### **City Parks Bring Social, Community Health and Economic Benefits**

The report outlines benefits in a number of areas: physical, including remedies for inactivity and obesity; economic, with increased property values; environmental, with pollution abatement; and social, from crime reduction to strengthening communities. *The Trust for Public Land (TPL), "The Benefits of Parks: Why America Needs More City Parks and Open Space."*



### **City Parks Offer a Sense of Place**

"How Cities Use Parks to . . . Help Children Learn," Chicago, IL: American Planning Association, 2003 [www.naturalearning.org](http://www.naturalearning.org) and [www.planning.org](http://www.planning.org)

## **Children's Outdoor Play Experiences**

### **Children spend less time playing outdoors than their mothers did when they were young**

In this study, researchers found that children in the early 2000s, as compared to a generation ago: 1) spend less time playing outdoors; 2) participate in different activities outdoors (e.g., fewer street games and more organized youth sports); and 3) participate in more indoor than outdoor play activities. *Clements, R. "An Investigation of the State of Outdoor Play." Contemporary Issues in Early Childhood, Vol. 5(1):68-80, 2004.*

### **Children's use of space has changed from being primarily outdoors to indoors and supervised**

In the 1950s and early 1960s "playing meant playing outside." Why? Necessity, small living spaces, and pleasure. Children had more freedom to move around on their own, had a relatively large territory to roam, played with children from diverse backgrounds, and used urban public space for many of their activities. In 2003 children did not play outside as much or for as long a period of time, had a more

restricted range in which they could move freely, had fewer playmates from less diverse backgrounds, were more home-centered, and experienced many more parent-induced constraints. *Karsten, L. "It All Used to be Better? Different Generations on Continuity and Change in Urban Children's Daily Use of Space." Children's Geographies, Vol.3 (3), pp275-290, 2005.*

### **Children's access to public play space has declined**

In the 1940s youth spent a significant amount of time playing in the streets, which was an important space for adventure, meeting other children, and independence. The increasing traffic in the 1950s sent children to numerous parks and playgrounds that offered structured, city-sponsored activities. Later, when parks were perceived as unsafe, children moved indoors, dominated by various forms of electronic media. *Wridt, Pamela J. "An Historical Analysis of Young People's Use of Public Space, Parks and Playgrounds in New York City." Children, Youth and Environments 14(1), 86-106, 2004.*



Cooperation and learning how to work together often result from unstructured play.

## **How Children Spend Their Time**

### **Children spend more of their diminishing free time in structured activities**

Hofferth, S.L. & J.F. Sandberg. "Changes in American Children's Time, 1981-1997." In S.L. Hofferth & T.J. Owens (Eds.), *Children at the Millennium: Where Have We Come From, Where Are We Going?* (pp. 1-7). New York: JAI, 2001. Hofferth, S.L. & S.C. Curtin. *Changes in Children's Time, 1997-2002/3: An Update*, 2006.

### **Children spend considerable time with media and multiple forms of media**

A few of the key findings highlighted in these reports include:

- Young people today experience a substantial amount of electronic media—Children between the ages of 6 months and 6 years spend an average of 1.5 hours with electronic media on a daily basis, whereas children between the ages of 8 and 18 years spend an average of nearly 6.5 hours a day with electronic media.
- Children's homes are filled with media—Nearly one third of children from 6 months to 6 years of age live in households where the TV is on all or most of the time.

Roberts, D. F., Foehr, U., & Rideout, V. *Generation M: Media in the Lives of 8 to 18 Year Olds*. Kaiser Family Foundation, 2005. Rideout, V. and E. Hamel. *The Media Family: Electronic Media in the Lives of Infants, Toddlers, Preschoolers, and Their Parents*. Kaiser Family Foundation, 2006.

## **Children's Fitness**

### **There has been a dramatic increase in the number of overweight children in the United States**

The prevalence of children (ages 6 to 11) who are overweight has increased from about 4% in the 1960s to almost 19% in 2003/4. Troiano, R. P., Flegal, K. M., Kuczmarski, R. J., Campbell, S. M., & Johnson, C. L. "Overweight Prevalence and Trends for Children and Adolescents: The National-Health and Nutrition Examination

Surveys, 1963 to 1991." *Archives of Pediatrics & Adolescent Medicine*, 149(10), 1085-1091, 1995.

[www.cdc.gov/nccdphp/dnpa/obesity/trend/index.htm](http://www.cdc.gov/nccdphp/dnpa/obesity/trend/index.htm)



Research compiled by Minnesota Project Learning Tree, from the Children and Nature Network  
[www.childrenandnature.org/research/](http://www.childrenandnature.org/research/)

## **Children's Environmental Knowledge**

The development of knowledge is complex; our knowledge about any given topic accumulates over time and is the result of numerous factors. Knowing about one's environment is an important foundation to being able to understand various issues and act in an informed and responsible manner. While research to date has not directly linked exposure to nature (or a decline in exposure to nature) to children's knowledge of the environment, it could be a reasonable and interesting indicator to further investigate. The studies highlighted below indicate that today's children know very little about their environment.

### **Children know more about Pokémon than common wildlife**

*Balmford, A., Clegg, L., Coulson, T., & Taylor, J. "Why Conservationists Should Heed Pokémon." Science, 295(5564), 2367-2367, 2002.*

## **Children's Independent Mobility**

### **Children are walking and bicycling to school less than they used to**

*Kids Walk-to-school: Then and Now—Barriers and Solutions. Center for Disease Control and Prevention, 2006*

### **In two decades children's independent mobility has dramatically declined**

*Hillman, M., & Adams, J. G. U. "Children's Freedom and Safety." Children's Environments, 9(2), 12-33, 1992*

### **Many children do not go out by themselves**

*Farmer, C. Home Office Citizenship Survey: Top Level Findings from the Children and Young People's Survey. Home Office and the Department for Education and Skills, 2005.*

### **Children do not play outside as much as they would like to**

Some of the key findings from these two surveys include: 1) a number of children do not play outside very often (20% of children play outside for an hour or less a week), 2) 39% of children do not play outside as much as they would like to, 3) children generally prefer to play in natural spaces over non-

natural spaces, 4) safety and the quality of their environment (e.g., the places to play outside) are the biggest factors that impact how much children play outside, and 5) outdoor and indoor activities (e.g., computer games, TV, and homework) seem to compete against one another for children's time. *Playday 2005 and 2006 Survey Reports. British Market Research Bureau for the Children's Play Council, 2005, 2006.*

### **Parental concerns are more influential than access to play spaces in determining play opportunities**

Most parents were dissatisfied with public play facilities in their neighborhoods based on their concerns about safety related to traffic and strangers. *Valentine, G. and McKendrick, J. "Children's Outdoor Play: Exploring Parental Concerns About Children's Safety and the Changing Nature of Childhood. Geoforum, 28(2), 205-220, 1997.*

*Research compiled by Minnesota Project Learning Tree, from the Children and Nature Network [www.childrenandnature.org/research/](http://www.childrenandnature.org/research/)*

**Parents identify safety as the biggest barrier to children's independent play**

Veitch, J., Bagley, S., Ball, K., & Salmon, J. "Where Do Children Usually Play? A Qualitative Study of Parents' Perceptions of Influences on Children's Active Free Play." *Health & Place*, 12(4), 383-393, 2006.

**Parental constraints seem to exert much greater control on children's play**

Tandy, C. "Children's Diminishing Play Space: A Study of Intergenerational Change in Children's Use of Their Neighborhoods."

*Australian Geographical Studies*, 37(2), 154-164, 1999.

**Parents' perceptions about their neighborhood influence children's mobility**

This study highlights the importance of the perceived neighborhood environment and its impact on parent and child behaviors. Timperio, A., Crawford, D., Telford, A., & Salmon, J. "Perceptions About the Local Neighborhood and Walking and Cycling Among Children." *Preventive Medicine*, 38(1), 39-47, 2004.

