

# Play in Natural Outdoor Environments: A Healthy Choice

*Children's health and outdoor play are a natural connection.*

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*"Time in nature is not leisure time; it's an essential investment in our children's health" (Louv, 2005, p. 120).*

Early childhood is a critical time for establishing a strong foundation of healthy habits that will shape children's physical and psychological well-being both in the present and future (Frost, 2010; Sanders, 2006). Having regular contact with natural outdoor environments plays a pivotal role in promoting children's health and well-being (Armitage, 2009; Jacobi-Vessels, 2013; Kernan & Devine, 2010; Louv, 2005; Robinson & Wadsworth, 2010). When children have regular time in the outdoors, including forests, parks, and playgrounds, they have opportunities to release stress, play vigorously, and directly explore nature, which in turn provide physical and psychological benefits (Frost, 2010, Jacobi-Vessels, 2013; Louv, 2005). Active, energetic, and cheerful states of mind restore health and energy to children's bodies. As a result, children who spend more time in outdoor environments usually eat and sleep better than do children who spend less time in the outdoors (Kernan & Devine, 2010; National Environmental Education Foundation/NEEF, 2011; Taylor, Kuo, & Sullivan, 2001). In addition, playing in natural outdoor environments often enables children to build happy childhood memories. Such memories function as a "protective buffer" to help children deal with future life stresses (Elkind, 2007); therefore, to promote children's health and well-being, children need to spend time in the outdoors.

Unfortunately, many children in America are often deprived of contact with the outdoor environment. Frost (2010) described the lack of outdoor activity as a "play, fitness, and health crisis for American children" (p.270) and suggested that "depriving children of their innate need for play and nature should be treated as child abuse" (p. 269). Similarly, Louv (2005) demon-

strated a concern about the reduction in outdoor play and coined the term "nature deficit disorder" to illustrate the seriousness of the crisis. Furthermore, research supports Frost's and Louv's views suggesting that sedentary, indoor activities may increase obesity, depression, attention deficit hyperactivity disorder, attention and memory problems, and compromised immune systems in children (Baldwin & Rudge, 1995; Clements, 2000; Green, Riley, & Hargrove, 2012; Louv, 2005; NEEF, 2011; Taylor & Kuo, 2009; Taylor, Kuo, & Sullivan, 2001; Thigpen, 2007).

**Establish healthy habits in early childhood.**

This article addresses the importance of play time in natural outdoor environments and attempts to increase early childhood teachers' awareness of the relationship between outdoor time and children's physical and mental health. It outlines potential health benefits of playing outdoors, factors that limit outdoor time, and strategies for teachers to foster children's outdoor activities.

## Potential Health Benefits of Outdoor Play

*"Outdoor play of any kind helps prevent obesity and related diseases, nurtures physical fitness, and improves development, learning, and overall well-being" (Frost, 2010, p. 261).*



Photo courtesy of Jake Drost Head Start, Sulphur, LA

*Outdoor play provides physical and psychological benefits.*

Natural outdoor environments which allow children to have direct contact with light, soil, wind, plants, and animals are viewed as optimal places to promote their health and well-being (Frost, 2010; Jacobi-Vessels, 2013, Elkind, 2006). While outdoors in nature, children experience a sense of freedom and the joy of learning through endless play with trees, leaves, dirt, and stones.

In recent years, many studies have found that children who spend less time in nature show an increase in chronic conditions such as childhood obesity, asthma, atopic symptoms, attention deficit hyperactivity disorder (ADHD), depression, and vitamin D deficiency (Lovasi, Quinn, Neckerman, Perzanowski, & Rundle, 2008; NEEF, 2011; Taylor & Kuo, 2009). Furthermore, outdoor activities promote good metabolism, musculoskeletal development, pulmonary and cardiovascular functions, anti-microbial detoxification, as well as maintaining healthy immune systems (Kernan & Devine, 2010; Louv, 2005; NEEF, 2011). When children play in natural outdoor environments, they are more inclined to engage in vigorous physical activities (e.g., running, jumping, climbing) that develop motor skills, strengthen the heart, increase lung function, and improve the health of muscles, bones, and joints (Bell, Wilson, & Liu, 2008; Department of Health and Human Services/ DHHS, 2009; Fjørtoft, 2001; Maller, Townsend, Pryor, Brown, & St. Leger, 2006; Thigpen, 2007). Indeed, vigorous activities decrease the incidence of many diseases and improve a child's fitness (NEEF, 2011).

Photo courtesy of Jake Drost Head Start, Sulphur, LA



*Contact with nature is not only fun, it has health benefits!*

Playing in natural outdoor environments is beneficial for eye health. Playing in natural outdoor environments with green plants can reduce

childhood myopia (nearsightedness), which has become increasingly common among young children who spend time indoors watching television, using computers, and playing video games (National Wildlife Federation/NWF, 2013). Playing outdoors or having prolonged light exposure may curb the development of or slow the progression of myopia in children, reducing their need for eyeglasses (Charters, 2012; Rose et al., 2008).

In addition to the reported improvement of eye health, exposure to sunlight helps boost children's immune systems (Baldwin & Rudge, 1995). Vitamin D, primarily produced in skin exposed to sunlight, is critical to children's healthy bone development. Vitamin D supports our natural immunity and helps calcium be absorbed into the body. Children who have insufficient levels of vitamin D are more likely to have rickets, cardiovascular disease, metabolic syndrome, hypertension, diabetes, myocardial infarctions, and peripheral arterial disease (Brender, Burke, & Glass, 2005; Huh & Gordon, 2008; Kumar, Muntner, Kaskel, Hailpern, & Melamed, 2009; Misra, Pacaud, Petryk, Collett-Solberg, & Kappy, 2008). Children require vitamin D to maintain proper levels of calcium and phosphorus in the blood to build strong bones (Brender et al., 2005). To produce the necessary amount of vitamin D, children need to go out in the sun every day, absorbing at least 10-15 minutes of sunlight per day (Huh & Gordon, 2008; Misra et al., 2008).

The physical benefits of outdoor play influence the psychological benefits and vice versa. For example, Baldwin and Rudge (1995) reported sunlight entering the eyes facilitates the secretion of serotonin in the



Photo courtesy of Jake Drost Head Start, Sulphur, LA

*Exposure to sunlight helps to promote optimal Vitamin D levels.*

brain. Serotonin is a brain neurotransmitter, a type of chemical that helps children stay calm and peaceful. Serotonin plays a critical role in controlling depression, violence, and suicidal impulses and in promoting children's focused attention and memory. Serotonin strengthens T-lymphocytes which kills cancer cells and produces endorphins which play a role in producing a feeling of well-being. Therefore, children who spend more time indoors hidden from sunlight are likely to lack serotonin thus becoming more susceptible to depression and impulsiveness. Exposure to sunlight can have a positive impact on their psychological condition and may reduce depression (Levandovski, Pfaffenseller, Carissimi, Gama, & Loayza Hidalgo, 2013)

Similar to the benefits of sunlight, there is some evidence of health benefits from soil. The bacterium *Mycobacterium vaccae* has been studied by the medical community and some findings indicate a health benefit to patients with diseases such as cancer and dermatitis (Arkwright & David,

2003; O'Brien et al., 2004) when they were infused with the bacterium. This bacterium that is found in soil may have benefits for children as they play and "get dirty" because the bacterium could potentially affect children as they have direct contact with soil.

**Promote children's health by spending time outdoors.**

Playing in natural outdoor environments which provide children with first-hand experience of green spaces, sunlight, and dirt offers a host of benefits including improving their immune system and eyesight, reducing stress levels and depressions, and promoting healthy bones and muscle development. Therefore, it is definitely good to go outdoors to boost children's physical and psychological health.

## Factors Influencing Limited Time Outdoors

Although playing outdoors promotes children's physical and psychological health, children today spend less time outdoors than ever before (Larson, Green & Cordell, 2011). Some negative effects of copious amounts of time indoors seen in children today are prevalence and increased rates of:

- Depression
- Obesity
- Asthma
- Vitamin D deficiency
- Vision problems
- Social isolation
- Attention problems (NEEF, 2011; NWF, 2013)

Furthermore, Kernan and Devine (2010) argue that playing in natural outdoor environments should not be thought of as optional for children but should be considered a right and a priority in children's lives to promote their health and well-being.

Given that time outdoors is essential for children, why are they not spending more time outdoors?

**One key factor is the perception that being outside is fraught with risk.** Fears such as the ever-lurking stranger, over exposure to sun, and accidents may prevent the teachers from encouraging children to play outdoors (DHHS, 2009; Garrick, 2009; Kernan & Devine, 2010; Little, Wyver, & Gibson, 2011; Louv, 2005). While teachers must think about how to reduce risk to create a safe outdoor environment, they must also consider how removing all possible risks could leave children with limited opportunities to be actively involved in physical activities (Kernan & Devine, 2010). This dichotomous perspective brings with it the awareness that safety and risk are not an either/or choice, but both must be considered in children's outdoor activities. The environment must be safe for children while at the same time provide enough freedom and challenge to permit children to stretch their physical and psychological capabilities.

**A second factor is the plethora of electronic devices available for children to use** (Hofferth, 2009). Children may be reluctant to move away from their computers or televisions even when parents ask them to go out and play. The amount of time children are engaged in sedentary activities including video games, TV, and computers is positively correlated with children's health problems, including obesity (Green et al., 2012; NWF, 2013; Robinson & Wadsworth, 2010). Not only does obesity change physical appearance, but according to NEEF (2011), it can also lead to asthma, diabetes, hypertension, and cardiovascular disease. Being overweight can lead children to reduce vigorous activities and become more easily fatigued, leading to a loss in confidence and depression (Green et al., 2012; Kernan & Devine, 2010). In severe cases, obesity can lead to skeletal deformities, joint disorders, menstrual disorders, and various hormonal diseases (Green et al., 2012). Although many factors contribute to childhood obesity (e.g., eating behaviors and genetics), increased time spent indoors is undoubtedly one factor. Thus obesity prevention is critical. Children must be encouraged to reduce their time with electronic devices and increase their outdoor activities. If forced to do so, children may be resistant; thus, it is better to start with activities that interest them.

## Ways to Facilitate Outdoor Activities

Playing outdoors advances the health and fitness of children; therefore, adults must provide access to and opportunities for this play. While some teachers may feel pressured to have children spend more



Photo courtesy of Agapeland Playspace, Marion, SC/  
The 2014 SECA Exemplary Outdoor Classroom

*Outdoor areas that are designed for exploration and "dirt digging" have health benefits for young children.*

time indoors on academically oriented tasks, research suggests that outdoor time is beneficial to children's academic success (NWE, 2013). For example, Skrupskelis (2000) found that children who spend more time in outdoor environments show greater capacity to focus their attention and higher academic performance than do sedentary children. Skrupskelis' research is supported by brain research that indicates exercise supplies oxygen-rich blood to the brain, thus improving brain function (Shaw, 2005). These findings imply that playing outdoors is essential not only for children's health but also for their learning. Children's engagement with instruction might increase through greater nature-induced "shots of serotonin."



Photo courtesy of Agapeland Playspace, Marion, SC/The 2014 SECA Exemplary Outdoor Classroom

*An outdoor classroom provides the opportunity to ensure that outdoor time is included in everyday activities.*

## Outdoor play supports physical and psychological health.

Increasing children's access to the outdoor provides them with more opportunities to develop a healthy mind and body. Indeed, early childhood lays the foundation to develop healthy lifestyles and positive attitudes toward a fit mind and body. How can teachers encourage children to spend more time in natural outdoor environments and less time indoors? It takes the efforts of communities, schools, and families.

- *Communities* can create more green spaces for children to play, including parks, nature trails, and safe playgrounds.
- *Schools* can provide more nature-oriented playgrounds with spaces for children to

come into contact with plants and animals.

- *Teachers* can become aware of the benefits of outdoor activities and create curriculum that takes children outdoors for learning.
- *Families* can use a variety of opportunities to spend time outdoors with their children.

outdoor activities to families. Furthermore, teachers and families can teach children about what to do if a stranger approaches, how to cross streets safely, and how to properly protect themselves from the sun, heat, and other inclement weather (DHHS, 2009; Garrick, 2009). Appropriate planning and scrutiny of outside environments can increase children's safety while outdoors.

### Plan Outdoor Time

Teachers need to incorporate time for the natural outdoors into children's daily routines. For improved health and wellness, children need to play at least 60 minutes a day (weather permitting) in the outdoors (NWE, 2013). Although some people may believe that more time doing "seat work" brings higher academic success (Jarrett & Waite-Stupiansky, 2009), more time outdoors may actually increase test scores (NWE, 2013).

### Play Together

When teachers play with children rather than sitting and monitoring, they have more opportunities to

### Suggestions for Planning Outdoor Activities

The following are suggestions for outdoor activities that teachers can encourage to promote children's health and well-being.

#### Provide Safety Education

Before going outside, teachers need to make a safety check and monitor the content of natural outdoor environments to provide children with safe areas to play. Additionally, teachers can send family newsletters with information about children's safety in the outdoors, display posters with the school's guidelines for outdoor play, post the guidelines on the school's website, and provide websites about the benefits of

learn about each child's fitness level and thus can provide more individualized activities. In addition, when playing together, the teacher and children can discover various types of plants and animals normally seen only in textbooks. Exploring the real world in its bare natural beauty, they are introduced to the wonders of nature which elicits a genuine sense of curiosity, appreciation, and respect for nature. They can blow dandelion spores, make bracelets with shamrock, and tickle each other's chins with green foxtail. By seeing nature in its four seasons and playing together, the teacher and children can appreciate shared time in nature and, more importantly, build better relationships.

### Engage Families

Teachers can also suggest to families that they model healthy habits for their children by encouraging more outdoor time. For example, instead of sitting in front of the computer during the weekend, the family can take a walk around their neighborhood, ride bicycles, or visit nearby parks and forests to hike trails.

### Conclusion

Playing in the outdoors should not be an optional activity but part of the daily schedule. Even when time is short, this type of play should not be eliminated. Regular contact with nature can improve children's physical and psychological health and well-being. When children stop spending time in nature, where should they look to maintain their good health and create happy memories?

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