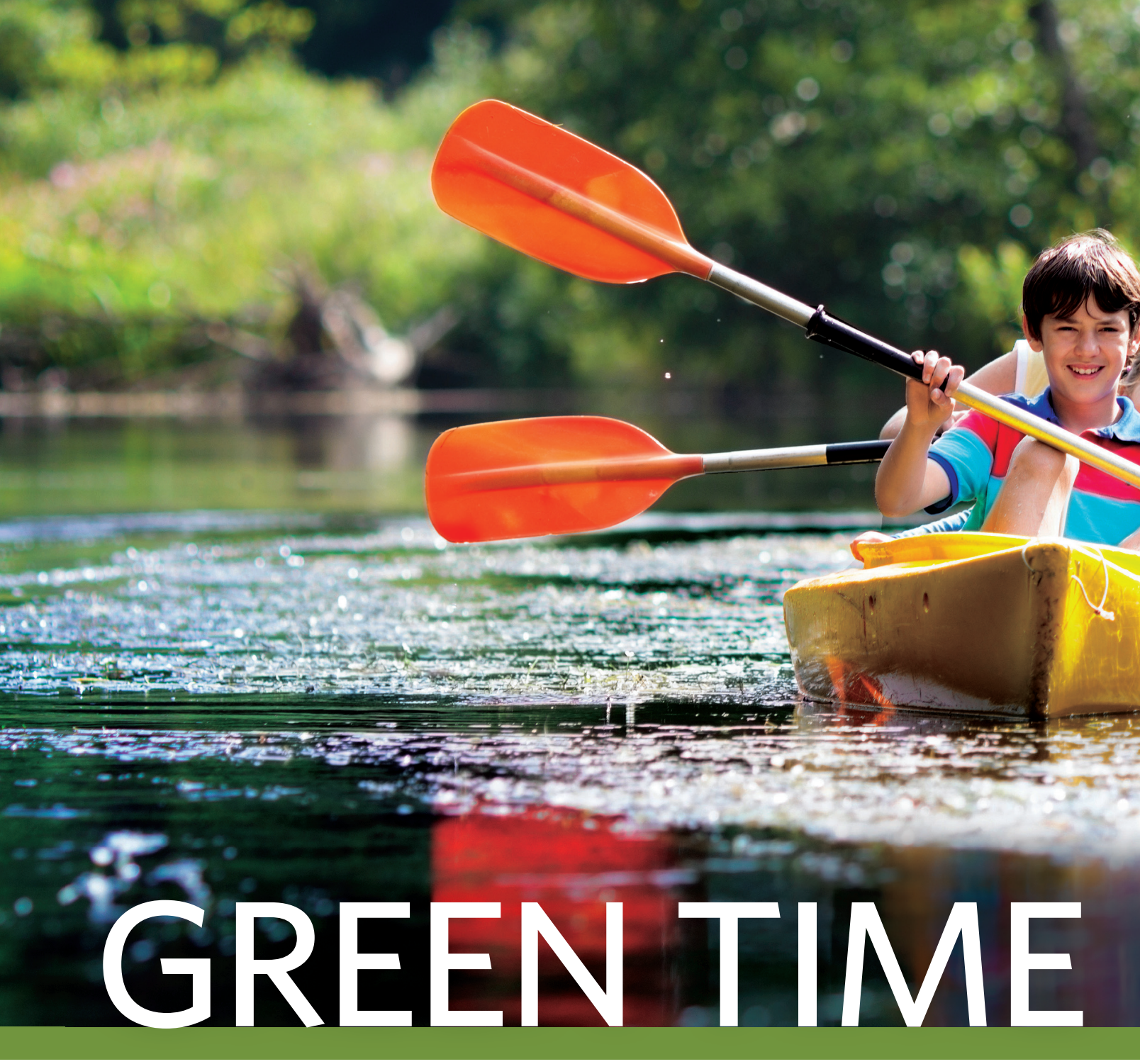

# GREEN TIME

Karen Sampson Hoffman, MA

**THE CHANGING SEASONS** bring many opportunities for getting outside to spend time in the park, hike through the woods, or explore the wilds of your backyard. For children with ADHD, enjoying nature can offer additional benefits.

A growing body of research indicates that children and adults who spend time in nature increase their ability to pay attention while lowering their levels of stress and anxiety. Researchers are specifically interested in how green time—spending time in a natural setting—can benefit children with an ADHD diagnosis.

The Children & Nature Network, which encourages time spent outdoors in green settings, states that the recent closing of school campuses due to the pandemic and the gradual reopening this school year provide a unique opportunity for communities to consider green time for students. Creating outdoor learning centers and green schoolyards can help meet student needs for exercise, stress reduction, and physical distancing.

# FOR ADHD

## The benefits of getting outside

Spending time outside has clear advantages for mental and physical health for everyone. Researchers suggest that time in a natural, non-urban setting is restorative to both the human body and brain. Such green time allows people to escape from stressful demands for their attention, such as watching the movement of cars while crossing the street, and instead pay attention to less task-oriented, more intriguing aspects of nature—the sights, sounds, smells, and dynamics therein.

"Studies show that exploring, playing, and learning in nature improves academic achievement more than indoor classroom instruction," wrote Sarah Milligan-Toffler and Richard Louv in "The Urgent Case for Green Schoolyards During and After COVID-19," published on the Children & Nature Network website. "In a brief integrative review of the research [researchers] found that positive shifts occur in perseverance, problem-solving, critical thinking, leadership, teamwork, and resilience—skills that are essential in overcoming the unprecedented challenges we face today."

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## Going green for ADHD

Children with ADHD experience challenges in attention, the ability to remain focused on a task, short-term memory, or the ability to sit still; they often have behavioral issues stemming from those challenges. Two researchers from the University of Illinois at Urbana-Champaign—Ming (Frances) Kuo, PhD, and Andrea Faber Taylor, PhD—surveyed children with ADHD nationwide in the mid-2000s who participated in various after-school and weekend activities with the goal of understanding how outdoor activities could affect their ADHD symptoms. Kuo is the director of the university's Landscape and Human Health Laboratory.

The children who participated in outdoor activities, spending structured and unstructured time in nature, appeared to experience a reduction in their ADHD symptoms.

"We were confident that acute exposures to nature—sort of one-time doses—have short-term impacts on ADHD symptoms," Kuo told the Children & Nature Network following the release of their research. "The question is, if you're getting chronic exposure, but it's the same old stuff because it's in your backyard or it's the playground at your school, then does that help?"

Examining the information they collected, Kuo and Taylor saw the answer to their question: Whether it was a backyard, a school playground, a city park, or a stand of trees in the neighborhood, there were improvements in symptoms and behavior after children had green time.

"On the whole, the green settings were related to milder overall symptoms than either the [control settings of the] 'built outdoors' or 'indoors' settings," Taylor said.

Rachel Kaplan, PhD, and Stephen Kaplan, PhD, study nature's effect on people and have seen that exposure to a natural environment—even if it's at a desk facing a window—helps improve attention and mental health. They describe two types of attention, directed or task-driven, and fascination. Too much directed attention can lead to attention fatigue, they argue, and results in impulsivity and distractibility. Being in nature, these researchers believe, allows a shift to fascination and can allow people to recover from situational inattention and impulsivity (not necessarily ADHD-related).

"Directed attention fatigues people through overuse," Stephen Kaplan told Rebecca Clay, writing for the American Psychological Association. "If you can find an environment where the attention is automatic [i.e., the environment intrigues you without expectation], you allow directed attention to rest. And that means an environment that's strong on fascination." That environment, they say, is a natural and green one.

## Health benefits of nature for everyone

The health benefits of spending time outside include:

- Improvements to short-term memory
- Reduced stress levels and lower levels of stress hormones that affect heart health and weight
- Improvement in eyesight (mostly among children)
- Improved immune function
- Improvements to mental health and decreased risks for depression and anxiety
- Increased natural vitamin D production, which is linked to improved health outcomes

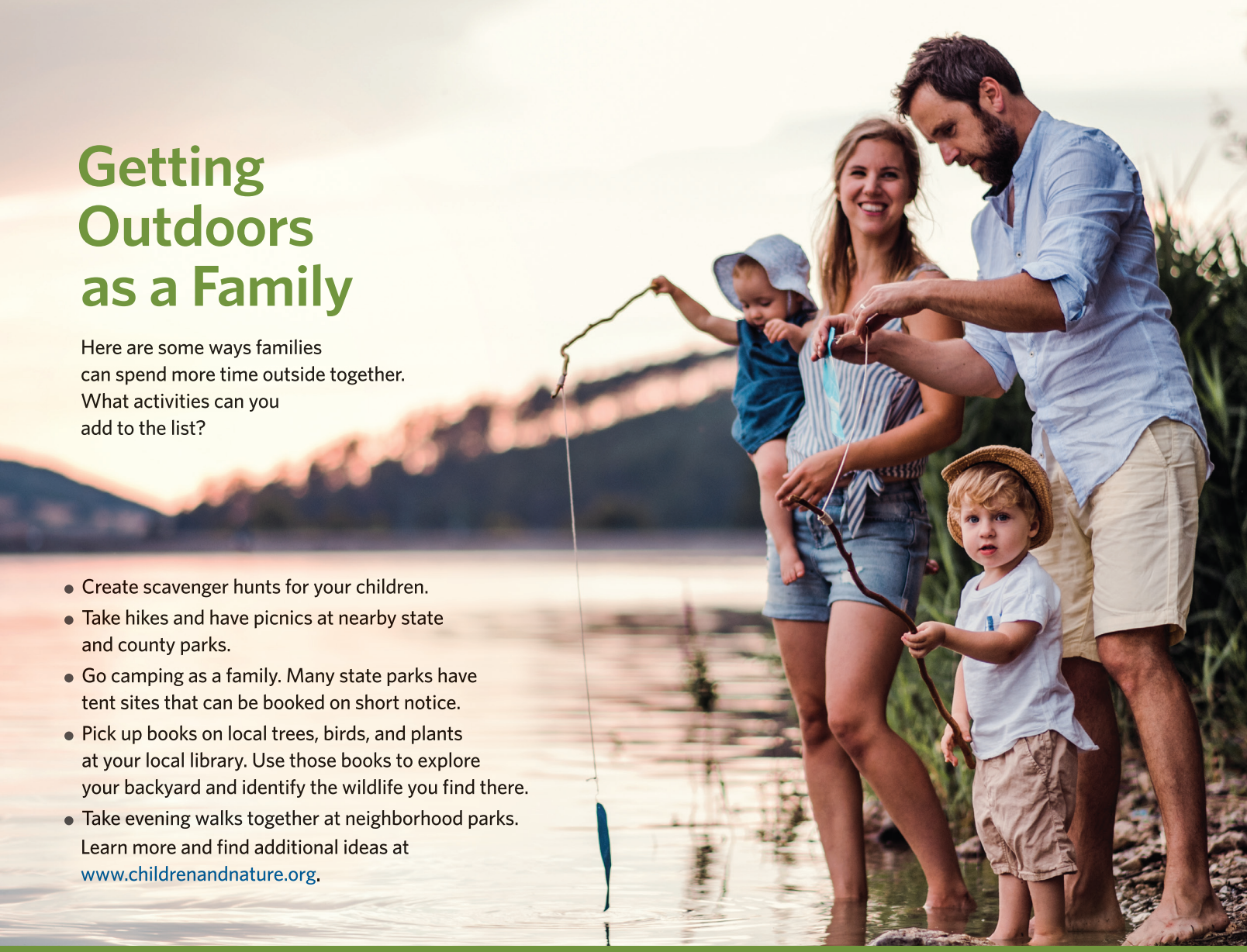
How does spending time in natural settings improve health? Ming Kuo, director of the Landscape and Human Health Laboratory at the University of Illinois at Urbana-Champaign, reviewed available research on the health effects of being closer to nature. She identified twenty-one pathways in the human body or brain that could be influenced by nature and had implications for special health outcomes—ways of being in nature that positively affect a person's health.

One set of pathways are the environmental conditions—the air processed by the plants, and microcompounds from the water and soil that are available in the air. These include phytoncides—antimicrobial volatile organic compounds released by plants, which reduce blood pressure, alter autonomic activity, and boost immune functioning. Also included are negative air ions, which are higher in forested environments. Negative ions may have the effect of helping to decrease symptoms of depression. The sights and sounds of a natural environment may also have an effect, since they help to reduce anxiety, stress, and inattention. Research also shows that healing following surgery improves when a person recuperates in a more natural environment.

Kuo's research also showed an improvement in immune function and an increase in healthy gut flora, both of which improve general health and may have a relationship to improved mental health.

# Getting Outdoors as a Family

Here are some ways families can spend more time outside together. What activities can you add to the list?



- Create scavenger hunts for your children.
- Take hikes and have picnics at nearby state and county parks.
- Go camping as a family. Many state parks have tent sites that can be booked on short notice.
- Pick up books on local trees, birds, and plants at your local library. Use those books to explore your backyard and identify the wildlife you find there.
- Take evening walks together at neighborhood parks.

Learn more and find additional ideas at www.childrenandnature.org.

## Getting more green time

Getting outside and spending time in nature settings is something one can do any time of the year, not just in the bright months of spring and summer. Children can benefit from spending more time outside in structured and unstructured activities. Families can spend time together at parks, in the backyard, and at local community activities.

If you can't get outside regularly, having a window that overlooks a natural setting still offers some benefits. Even a picture, such as a photograph on the wall or an image on a TV screen or computer monitor, can provide some benefit, though not quite like being outside under the trees.

**Karen Sampson Hoffman, MA**, *is the program associate for CHADD's National Resource Center on ADHD and the editor of* ADHD Weekly, *where an earlier version of this article appeared.*

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