

# Physical and mental health benefits of access to outdoor recreation and nature for people with disabilities

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## Summary

This white paper explores the physical and mental health benefits of outdoor recreation and nature, focusing on those with disabilities. The paper has four sections.

Section 1 examines the physical health benefits of access to outdoor recreation and nature, such as improved cardiovascular health, reduced risk of chronic diseases, and increased levels of physical activity. Research has demonstrated that spending time in nature can lead to positive physical health outcomes for all individuals.

Section 2 explores the mental health benefits of access to outdoor recreation and nature, including reduced stress, improved mood, and increased feelings of well-being. The research suggests that these benefits are significant for all individuals, regardless of age or ability.

Section 3 focuses on the physical health benefits of access to outdoor recreation and nature for individuals with disabilities. This section highlights that individuals with disabilities may face additional barriers to accessing outdoor recreation and nature. However, research suggests that outdoor activities can have significant physical health benefits for this population, including improved cardiovascular health, increased mobility and flexibility, and reduced risk of secondary health conditions.

Section 4 investigates the mental health benefits of access to outdoor recreation and nature for those with disabilities. The research indicates that outdoor activities can positively impact mental health outcomes for this population, including reducing stress, improving mood, and enhancing social connections.

Overall, this white paper presents compelling evidence that access to outdoor recreation and nature can significantly impact physical and mental health for all individuals, including those with disabilities. However, there is still substantial that is unknown, including the role of confounding variables, such as socio-economic conditions, and a better understanding of the specific scientific triggers leading towards improved mental and physical health. The hope is that this paper can drive policy discussions and academic research to promote access to nature-based activities for all individuals. It is essential that all individuals, regardless of age or ability, have access to the numerous benefits that spending time in nature can provide.

## Introduction

The physical and mental health benefits of outdoor recreation and nature have been extensively studied and documented. (Schertz et al. 2019; Bratman et al. 2019; Nejade et al. 2022) In *Last Child in the Woods*, Richard Louv coined the term 'nature deficit disorder,' describing the human costs of alienation from nature. At the time

of publishing in 2005, there were only a few dozen papers on the health effects of nature and the outdoors. By 2020, upwards of one thousand papers pointed towards nature not only being generally positive, but completely necessary for physical and mental health (Robbins 2020). Research suggests that spending time in nature can improve physical fitness, reduce stress and anxiety, and enhance mood and overall well-being. However, the benefits of nature-based activities for individuals with disabilities have not been given as much attention in the literature. This white paper explores further the physical and mental health benefits of access to outdoor recreation and nature while focusing on the benefits for those with disabilities. The topic is best broken down into four underlying sections that best fit the literature as it has been explored.

*Section 1: Physical health benefits of access to outdoor recreation and nature.*

Spending time in nature has been shown to positively impact physical health, including improved cardiovascular health, reduced risk of chronic diseases, and increased levels of physical activity. This section will explore the ways in which outdoor recreation and nature can improve physical health and well-being for all individuals.

*Section 2: Mental health benefits of access to outdoor recreation and nature.*

The mental health benefits of spending time in nature are well-documented and include reduced stress, improved mood, and increased feelings of well-being. This section will explore the ways in which outdoor recreation and nature can improve mental health and well-being for all individuals.

*Section 3: Physical health benefits of access to outdoor recreation and nature for those with disabilities.*

Individuals with disabilities may face additional challenges in accessing outdoor recreation and nature. However, research suggests that outdoor activities can have significant physical health benefits for this population, including improved cardiovascular health, increased mobility and flexibility, and a reduced risk of developing secondary health conditions. This section will explore the physical health benefits of outdoor recreation and nature for those with disabilities.

*Section 4: Mental health benefits of access to outdoor recreation and nature for those with disabilities.*

In addition to the physical health benefits, outdoor recreation and nature can have significant positive impacts on mental health and well-being for individuals with disabilities. This section will explore how outdoor activities can improve mental health outcomes for this population, including reducing stress, improving mood, and enhancing social connections.

Overall, this white paper will explore the ways that outdoor recreation and nature can affect the physical and mental health of individuals, focusing on those with disabilities. The hope is that the information presented here can be used as a jumping-off point to inform policy discussions and further academic research that promote access to nature-based activities for those with disabilities.

## **Physical health benefits of access to outdoor recreation and nature**

There is a growing body of evidence supporting the physical health benefits of nature-based interventions (NBIs) for improving health outcomes. However, further research is needed to establish the magnitude and relative effect of NBIs, and to quantify their compounding effect (Nejade et al., 2022). Despite this need for further research, the potential health benefits from nature are diverse, with many direct and indirect pathways leading to physical, mental, and social health outcomes. This finding poses specific quandaries from those in urban environments, where access to nature and outdoor activity is limited. Thus, policymakers are called upon to develop cost-effective nature-based solutions that meet the health challenges of a growing urban population (Shanahan et al., 2015).

These health benefits have been quantified to some degree. Research has shown that the likelihood of reporting good health or high well-being becomes significantly greater with exposure of 120 minutes or more per week, with positive associations between 200-300 minutes per week (White et al., 2019). However, the poor understanding of which components of nature deliver which health benefits prevent the effective integration of nature into health policy. Consequently, urban planning generally takes a one-size-fits-all approach by setting broad provision-based targets and guidelines for urban green infrastructure (Shanahan et al., 2015).

## **Mental health benefits of access to outdoor recreation and nature**

Research has shown that NBIs can be effective tools for improving mental health outcomes, although further research is needed to establish the magnitude and relative effect of such interventions (Nejade et al. 2022). The potential mental health benefits of access to outdoor recreation and nature are diverse, with many direct and indirect pathways leading to improved mental well-being, as well as physical and social benefits (Shanahan et al. 2015).

Individuals who reported at least 120 minutes spent outdoors per week were significantly more likely to report good health or high well-being compared to those who reported no nature contact. Positive associations peaked between 200-300 minutes per week, with no further gain observed beyond this point, and the pattern was consistent across populations, including individuals with long-term health issues (White et al. 2019).

However, despite this growing body of evidence supporting the mental health benefits of nature-based interventions, the correlative design of most previous studies and the continuing poor understanding of which components of nature deliver which health benefits prevent truly effective integration of nature into health policy. As a result, urban planning tends to take a one-size-fits-all approach in setting broad provision-based targets and guidelines for urban green infrastructure (Shanahan et al. 2015). Thus, further robust, hypotheses-driven research is needed to inform policymakers on how best to develop cost-effective nature-based solutions that meet the mental health challenges faced by a rapidly growing urban population. Additionally, it is necessary to examine the specific mental health benefits of access to outdoor recreation and nature for individuals with disabilities in order to promote greater inclusion and access to nature-based activities for this population. Lastly, there is a need to distinguish nature's role from other roles, such as lack of opportunity, insufficient amenities, or racial prejudice. (Bratman et al. 2019)

## **Physical health benefits of access to outdoor recreation and nature for those with disabilities**

Individuals with mobility disabilities face challenges in engaging in physical activity, which can increase the risk of developing chronic health conditions. However, access to outdoor recreation and nature may provide an alternative environment for the rehabilitation and management of disabilities and promote physical health benefits. People with mobility disabilities could gain different physical health benefits from nature-based interventions, ranging from passive contact to active involvement and rehabilitative interventions. In addition, urban parks that are accessible can provide opportunities for physical activities and exercise, which may help mitigate health disparities in persons with disabilities. Further research, particularly randomized controlled trials evaluating the long-term effectiveness of park-based interventions, is necessary to understand better the physical health benefits of nature-based interventions for individuals with mobility disabilities. (Zhang et al. 2017; Saitta et al. 2018)

## **Mental health benefits of access to outdoor recreation and nature for those with disabilities**

While there is a positive correlation between observed mental health benefits and time spent outdoors and in nature in the general population, there is increasing evidence that individuals with disabilities may gain even greater benefits. People with mobility disabilities, for example, can gain mental health benefits from different kinds of nature contact, ranging from passive to active involvement and rehabilitative interventions. (Zhang et al. 2017) Parks, in particular, may provide an alternative environment for the rehabilitation and management of disabilities, as well as a venue for accessible outdoor recreation. In a study examining the effects of outdoor gardening at an inpatient psychiatric facility, the results were drastic. (Pieters et al. 2019) Not only was gardening used to gain insights into their illnesses, but the sensory stimulation provided calmness, improved mood, pro-social behavior, and a sense of community.

Individuals with developmental disabilities have also reported experiencing diverse benefits from outdoor recreation, including satisfaction, mental reprieve, empowerment, enlightenment, social connectedness, and thrill. They have also identified intrapersonal, interpersonal, and structural constraints and facilitators related to their outdoor recreation participation. (Armstrong et al. 2023) These findings highlight the importance of accessible outdoor recreation and nature experiences for individuals with disabilities and suggest the need for tailored interventions to support their participation. Further research is needed to understand better the specific benefits of nature contact for individuals with disabilities and to develop effective interventions to promote their mental health and well-being.

### **Discussion**

The physical and mental health benefits of access to outdoor recreation and nature for individuals with disabilities are substantial and noteworthy. While the literature on the subject is still emerging, it is clear that outdoor activities can improve cardiovascular health, increase mobility and flexibility, reduce stress, and enhance social connections for those with disabilities. Furthermore, outdoor recreation and nature-based activities can have significant impacts on the mental health and well-being of this population, including reducing stress, improving mood, and increasing overall feelings of well-being.

Despite the potential benefits, individuals with disabilities may face unique challenges in accessing outdoor recreation and nature-based activities. However, legislative commitments to ensure that urban parks and other natural spaces are accessible can mitigate these disparities and promote equity in access to nature-based activities.

Overall, the findings presented in this white paper highlight the importance of promoting further research focusing on the benefits of access to outdoor recreation and nature-based activities for individuals with disabilities. However, the evidence presented here suggests that nature-based activities have the potential to positively impact the physical and mental health of individuals with disabilities and promote overall well-being.

### **References**

Armstrong, Merry, et al. "Experiences in Outdoor Recreation among Individuals with Developmental Disabilities: Benefits, Constraints, and Facilitators." *Journal of Intellectual & Developmental Disability*, vol. 48, no. 1, 2022, pp. 46–57, <https://doi.org/10.3109/13668250.2022.2104449>.

Bratman, Gregory, et al. "Nature and Mental Health: An Ecosystem Service Perspective." *Science Advances*, 2019, <https://doi.org/aax0903>. Accessed 8 May 2023.

Louv, Richard. *Last Child in the Woods*. Algonquin Books, 2008.

Nejade, Rachel M et al. "What is the impact of nature on human health? A scoping review of the literature." *Journal of global health* vol. 12 04099. 16 Dec. 2022, doi:10.7189/jogh.12.04099

Pieters, Huibrie C., et al. "Gardening on a Psychiatric Inpatient Unit: Cultivating Recovery." *Archives of Psychiatric Nursing*, vol. 33, no. 1, 2019, pp. 57–64, <https://doi.org/10.1016/j.apnu.2018.10.001>.

Robbins, Jim. "Ecopsychology: How Immersion in Nature Benefits Your Health." Yale E360, 9 Jan. 2020, [www.e360.yale.edu/features/ecopsychology-how-immersion-in-nature-benefits-your-health](http://www.e360.yale.edu/features/ecopsychology-how-immersion-in-nature-benefits-your-health).

Saitta, Miles, et al. "Park-Based Physical Activity Interventions for Persons with Disabilities: A Mixed-Methods Systematic Review." *Disability and Health Journal*, vol. 12, no. 1, 2019, pp. 11-23, <https://doi.org/10.1016/j.dhjo.2018.07.006>. Accessed 8 May 2023.

Schertz, K. E., & Berman, M. G. (2019). Understanding Nature and Its Cognitive Benefits. *Current Directions in Psychological Science*, 28(5), 496–502. <https://doi.org/10.1177/0963721419854100>

Shanahan, Danielle F., et al. "The Health Benefits of Urban Nature: How Much Do We Need?" *BioScience*, vol. 65, no. 5, 2015, pp. 476–485, <https://doi.org/10.1093/biosci/biv032>.

White, M.P., Alcock, I., Grellier, J. *et al.* Spending at least 120 minutes a week in nature is associated with good health and wellbeing. *Sci Rep* 9, 7730 (2019). <https://doi.org/10.1038/s41598-019-44097-3>

Zhang G, Poulsen DV, Lygum VL, Corazon SS, Gramkow MC, Stigsdotter UK. Health-Promoting Nature Access for People with Mobility Impairments: A Systematic Review. *Int J Environ Res Public Health*. 2017 Jun 29;14(7):703. doi: 10.3390/ijerph14070703. PMID: 28661433; PMCID: PMC5551141.