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## Take a Hike – No Really, It’s Good for Your Health

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## Take a Hike – No Really, It’s Good for Your Health

*Nathan Weller*

**Abstract:** Mental health and its treatment remain prevalent concerns across the United States. As such, the importance of activities that promote mental well-being cannot be understated. One such example includes the use of nature to minimize negative, depressive thoughts while promoting their positive counterparts. This new area of focus, often known as ecotherapy, will be detailed in the following article.

Across the United States, mental health and well-being remain prevalent concerns, as current data suggests that nearly half of all Americans will be diagnosed with a mental health condition at some point in their lives.<sup>1</sup> Include the fact that mental illnesses, such as depression, are the third leading cause of hospitalizations, and it becomes clear that mental health must remain a priority and an area of focus within the scope of modern health care.<sup>1</sup> Mental health care has taken great strides over the years. Although a myriad of treatments is now available to patients, ranging from medication-based to cognitive-behavioral approaches, the exploration of healthy lifestyle choices and self-administered therapy should not be overlooked. In their 2009 article, Cecily Maller et al. highlight this thought, making it clear that natural spaces are critical to human health and well-being.<sup>2</sup> As such, this point must be explored further by looking to fields of study, such as ecotherapy, that focus on the overlap between nature and mental well-being. Patient-reported data and physiologic findings support this relationship and highlight the need to incorporate the natural world into future wellness plans.

It has long been understood that walking and similar forms of physical exercise have positive effects on the mind; however, the nature and extent of this effect have, until recently, remained largely unknown and underappreciated.<sup>3</sup> To address this lack of understanding, researchers in a 2014 study collected self-reported data from walkers (participants in the Walking for Health initiative) and non-walkers, measuring depression, perceived stress, and overall mental wellbeing, among other outcomes. By the study’s conclusion, not only did walkers show signs of improved mental health, but group nature walks were “significantly associated with lower depression” when controlled for other variables.<sup>3</sup> In addition to overall decreases in perception of depression, participants who took part in group nature walks showed lowered signs of “perceived stress and negative affect” as well as “greater mental well-being and positive affect.”<sup>3</sup> With this point in mind, one may reasonably question the significance of the walkers’ environment – i.e. natural settings – on their mental well-being. In other words, it may be expected that the physical activity and exercise associated with walking may better explain the study’s findings. However, the researchers took this thought into account, and found that while physical activity had the greatest predictive power regarding mental well-being, group walks in nature proved to be strong predictors of favorable mental health as well.<sup>3</sup> When controlling for physical activity, these nature walks were the second strongest predictors of positive effect and mental well-being.<sup>3</sup> This reinforces the work of previous research on the benefits of physical activity on mental health, and further supports the role of natural spaces as well.

Additional research regarding the influence of nature on participant-reported well-being can be found in a 2015 study on the impact of time spent outdoors in a natural setting versus an urban setting.<sup>4</sup> Researchers looked specifically at the effect that walking in each of these environments had on participant rumination, a maladaptive state of mind focused on the consequences of emotions that has been shown to “predict the onset of depressive episodes.”<sup>4</sup> By the study’s end, the findings showed that participants displayed a significant reduction in self-reported rumination after spending 90 minutes walking in an outdoor, natural setting compared to their urban counterparts.<sup>4</sup> Like the previously mentioned study on group walks in nature, this again highlights the restorative potential of nature as it relates to perceived mental and emotional distress.

Knowing the positive impact that time spent among nature has on the perception of stress, anxiety, and depression is likely of little surprise. Anecdotal accounts that refer to the restorative potential of the outdoors exist, and some reading this article may even recall a time when a camping excursion, hike, or similar outing helped boost positive feelings. This implies a need for greater guidance regarding the basis of the natural world’s impact on mental health. Specifically, changes in physiologic features and function should be reviewed in order to develop a greater perspective regarding the interplay between the natural world and mental health.

Following their use of participant self-reporting measures, researchers from the 2015 study on rumination turned their attention to the impact that these walks had on brain activity. The researchers utilized a neuroimaging method known as arterial spin labeling, which measures the volume of blood flow through areas of interest in the brain, highlighting their level of activity.<sup>4</sup> This was a particularly useful tool, as it had the potential to “detect effects associated with longer-lasting psychological phenomena such as rumination, in contrast to momentary, reactive emotional responses such as the startle response,” without having to conduct a long-term, longitudinal study.<sup>4</sup> With this imaging technique, researchers looked to the level of activation in each participant’s subgenual prefrontal cortex (sgPFC), an area of the brain that displays increased activity during sadness, depressive moods, and mental states indicative of rumination.<sup>4</sup> By the study’s conclusion, the findings showed a significant correlation between walks in and among natural spaces and decreased levels of sgPFC stimulation, suggesting that the restorative potential of time spent in nature draws from

its impact on lowering the self-focused, negative patterns of thinking manifested as rumination.<sup>4</sup>

sounds. *Sci Rep.* 2017;7: Article 45273. doi: 10.1038/srep45273.

Furthermore, other research efforts that look to find a tie between nature exposure and favorable physiologic states have recently been conducted. In a 2017 study, focused on the relationship between naturalistic versus artificial sound playback and neuronal activity, researchers looked to functional brain imaging and other monitors of basic vital signs to discover the impacts of these varying stimuli. By the study's conclusion, their findings suggested that upon exposure to naturalistic sounds, participants displayed decreased functional connectivity between areas of the brain associated with negative thoughts.<sup>5</sup> Further, parasympathetic nervous system stimulation – generally responsible for rest and relaxation throughout the body – was noted, particularly in cardiac tissue.<sup>5</sup> The parasympathetic tone of the heart controls its rate, and with increases in this tone, we would expect decreases in heart rate, a common indicator of diminished stress level. This parasympathetic action coupled with decreased brain activity in areas associated with poor mood further reinforce the message that natural stimuli can correct a diminished mental state.

With increasing awareness and concern regarding mental health, the need for accessible strategies to combat stress, anxiety, and depression becomes all the more pertinent. At this stage, it is clear that time spent among the natural world should continue to grow as a significant strategy to achieve the favorable states of decreased rumination, lowered anxiety and depression, and enhanced mood. Aside from the physical benefits that outdoor activity likely extends for our bodies, studies show that an abundance of benefits to mental health can be found within the natural world. The participant-reported data on depression, stress, and overall mood along with physiologic findings on brain and heart activity all point to the significant impact that nature has on our well-being.

## References

1. Data and Publications – Mental Health – CDC. Center for Disease Control and Prevention. [https://www.cdc.gov/mentalhealth/data\\_publications/index.htm](https://www.cdc.gov/mentalhealth/data_publications/index.htm). January 26, 2018. Accessed September 30, 2019.
2. Maller C, Townsend M, St Leger L, et al. Healthy parks, healthy people: the health benefits of contact with nature in a park context. *The George Wright Forum*. 2009;26(2):51–83.
3. Marselle M, Irvine K, Warber, S. Examining group walks in nature and multiple aspects of well-being: a large-scale study. *Ecopsychology*. 2014;6(3):134–147. doi:10.1089/eco.2014.0027.
4. Bratman GN, Hamilton JP, Hahn KS, Daily GC, Gross JJ. Nature experience reduces rumination and subgenual prefrontal cortex activation. *PNAS*. 2015;112(28):8567–8572.
5. Gould van Praag CD, Garfinkel SN, Sparasci O, et al. Mind-wandering and alterations to default mode network connectivity when listening to naturalistic versus artificial