

My First Medical Writing

Editorial

For this issue, I had the pleasure of working with Spanish science writer Clara García-Gorro. Clara received a PhD in cognitive neuroscience at the University of Barcelona and studied science communication at the University of

Cambridge. She communicates to a lay audience on topics like neuroscience and psychology on her YouTube channel, *Cerebrotres*, and on her podcast, *Mentes Covalentes*. She is also a freelance science writer who explains scientific concepts to

different audiences. In this article, Clara shares scientific research on how spending time in nature keeps us healthy. Food for thought!

Evguenia Alechine

Spending time in nature every day keeps the doctor away

Humans have long known intuitively that spending time in nature is beneficial for our health without understanding exactly how or why. Forty years of research has repeatedly shown that exposure to nature is indeed associated with a variety of positive health outcomes, including lower mortality from cardiovascular disease, reduced blood pressure, less frequent allergies, improved mental health, and better self-perceived feeling of general health.¹

Besides reducing air pollution and regulating air temperature, vegetation might itself have an indirect positive effect on our health. Green spaces can encourage people to engage in physical activity, which in turn helps to reduce the risk of obesity, diabetes, mental health issues, and other health conditions associated with a sedentary lifestyle.

A recent study found that children in Denmark who grew up with the lowest levels of

green space in their place of residence had up to a 55% higher risk of developing a psychiatric disorder in adulthood, after taking into account other risk factors such as the degree of urbanisation, socioeconomic status, parental age, and family history of mental illness.² Green space was quantified using satellite images covering the whole of Denmark between 1985 and 2013.

Notably, the psychological benefits of contact with nature are not exclusive to wild forests and mountains but are similar for both wild natural environments and urban green spaces.³ It seems, therefore, that urban parks could help address the public health problems posed by urbanisation. However, to ensure that investment in green spaces can help improve citizens' health, it is important to understand what types of natural spaces are most beneficial and whether frequency and time spent in nature play a role. Scientists have found that spending more than 2 hours in

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Evguenia Alechine

ealechine@gmail.com

nature increases the likelihood of good health and well-being the following week.⁴ This is true up to 5 hours of nature exposure. Beyond that, more time in contact with green spaces is not associated with better health. Research shows that people who make longer visits to green spaces are less likely to suffer from depression or high blood pressure.¹ Specifically, visits to nature of 30 minutes or more at least once a week already show positive health effects, reducing by up to 7% the prevalence of depression and up to 9% the prevalence of high blood pressure.¹

However, it is important to bear in mind that correlation does not imply causation. It could well be that people with depression or high blood pressure – which are associated with other risk factors such as obesity – spend less time outdoors and, consequently, less time in contact with green spaces, as a result of their medical conditions. However, in this study, relevant factors such as activity levels and body mass index were included in the analyses.¹

We might also wonder whether all green spaces provide the same benefits. When directly comparing the effect of different green areas in New York City, the benefits of living close to a green area were greater in spaces with trees compared to grass-only areas.⁵

Curiously, nature can benefit our cognitive abilities even if we only look at it through a window or in pictures. For instance, university students in the United States who lived in rooms with views of green spaces performed better in cognitive tests measuring their attention capacity.⁶ Similarly, in another study in which participants were first mentally fatigued by





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performing a sustained attention task and then shown photographs of nature scenes, urban environments, or geometrical patterns, only those who had viewed the nature scenes improved their attention scores.⁷

But do we know why nature has so many benefits for our health? It is easy to understand that plants can contribute to our physical health by absorbing pollutant gases such as carbon monoxide, sulphur dioxide, nitrogen dioxide, and ozone, as well as particulate matter. In addition, parks provide a pleasant environment where we can walk and exercise. But, what about the restorative effect of exposure to nature for our mental health and attention capacity? Different theories try to explain this phenomenon.³

The biophilia hypothesis proposes that, since human beings evolved in natural environments, we have an innate need to interact with other forms of life.⁸ On the other hand, according to the stress-reduction theory, exposure to environments with water, plants, expansive views, and other elements that helped our ancestors to survive reduces our physiological and psychological response to stress.⁹ Finally, according to the attention restoration theory, natural environments contain elements that fascinate us, such as scenic views, trees, flowers, or water, which draw our attention in an involuntary manner.^{10,11} This allows our voluntary attention mechanisms to be restored, which is important, given that we need voluntary attention to achieve focus, but it requires effort and is susceptible to fatigue. In contrast, urban environments present us with stimuli that require our voluntary attention in order to act accordingly, such as traffic lights and other pedestrians, while trying to filter out

distracting stimuli such as traffic noise and ads, which drain us mentally.

Whatever the underlying cause may be, science shows that spending more time in nature can have multiple benefits for our health and cognitive abilities. Thus, we should take this into account for public policies when deciding how much to invest in the provision, management, and enhancement of public green spaces. In the meantime, though, we can take care of ourselves by ensuring we have our weekly dose of exposure to nature.

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Clara García-Gorro
Cheltenham, United Kingdom
clara.garcia.gorro@gmail.com

