

Quality and use of green spaces may determine their health benefits

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Numerous scientific studies have demonstrated the benefits that green spaces have in people's lives. In fact, various studies led by ISGlobal have found links between exposure to green spaces such as parks and

forests and various health improvements, including slower physical and mental decline, decreased risk of breast cancer and, most recently, reduced risk of developing metabolic syndrome. However, very little is known about the mechanisms that mediate this positive impact.

The Barcelona Institute for Global Health (ISGlobal) recently published two new studies on how natural spaces improve health and well-being. Both studies looked at four European cities: Barcelona, Spain; Stoke-on-Trent, United Kingdom; Doetinchem, Netherlands; and Kaunas, Lithuania. The studies were a part of PHENOTYPE, a project led by ISGlobal researcher Mark Nieuwenhuijsen that aims to study the interconnections between human health and exposure to outdoor environments.

In the first study, published in *Environment International*, the researchers considered four parameters: amount, quality, use and experience of natural outdoor environments. "Many earlier studies focused on quantitative measures of green spaces such as the amount of vegetation and the distance from people's homes, without taking into account the quality of the spaces or the activities that people engage in there," commented Nieuwenhuijsen, leader of the study and coordinator of the Urban Planning, Environment and Health Initiative at ISGlobal.

In each of the four cities, a thousand people between 18 and 75 years of age answered a series of survey questions on topics related to their local green spaces, including frequency of use, perceived quality, distance from their homes, activities they engage in, how often they socialise with other people and how they feel while using the spaces.

"Our research shows that the presence of green [space](#) is not the main factor that increases the frequency of physical activity, walking and cycling," commented Nieuwenhuijsen. "Perceived greenness, time spent in local green spaces, and the feeling that these spaces are important for

health-related activities are factors associated with more time spent performing physical activity. In fact, we found a 19-minute increase in activity for every point increase in this category."

Similarly, high scores for the quality of the urban landscape, perceived greenness, satisfaction with the spaces and the importance of the green spaces for health-related activities were also associated with a higher frequency of social contacts with neighbors.

The researchers also found that Barcelona had the least green space of the four cities studied. Just 49.3% of participants from Barcelona had a natural outdoor [environment](#) within 300 meters of their home, compared with 99.9% of participants from Doetinchem.

Moreover, when the researchers analyzed various elements related to satisfaction with green spaces (quality, amount, maintenance and safety), they once again found clear differences between the cities. Participants living in Barcelona gave low satisfaction scores for quality and amount of green space, while residents of Kaunas gave the lowest scores for maintenance and safety. "The differences found between the cities show how important it is to develop policies adapted to the local context," commented Nieuwenhuijsen.

Green space influences people's moods

In the second study, also published in *Environment International*, nearly 370 people were asked to use a smartphone to record their moods over a period of seven consecutive days. The smartphone also tracked if they were visiting urban natural environments.

"This study shows that there is a positive association between mood and exposure to green spaces," commented Michelle Kondo, lead author of the study. "However, this relationship varies as a function of age, gender

and city of residence. In fact, the beneficial effect of green spaces on mental health was especially notable in men."

The second study shows that exposure to green space has a larger effect on mood during 10-minute visits than during 30-minute visits. "This could mean that immediacy is a key element in the emotional response," commented Kondo.

"Both studies demonstrate that the use and quality of green spaces are key factors that influence physical activity, social contacts and emotional well-being," commented Nieuwenhuijsen. "We need to take these experiences into account if we want to understand what motivates people to visit [green spaces](#). Initiatives such as involving local residents in the park design process or organizing activities in urban natural environments could make these spaces even more beneficial for people's health."

More information: *Environment International* (2019). [DOI: 10.1016/j.envint.2019.105173](https://doi.org/10.1016/j.envint.2019.105173)

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