

Science for Environment Policy

Nature in urban environments reduces stress

Contact with nature in urban areas can have numerous health benefits, a new study finds. The researchers found people whose homes had views of different kinds of vegetation had significantly lower levels of stress hormones, indicating that green spaces play an important role in healthy cities.

Urban nature — such as trees and public parks — is beneficial to human health. A number of studies have found that living close to nature can have immediate positive effects on mental and physical health. However, the longer term health impact of urban nature remains poorly understood.

Addressing these knowledge gaps, this study investigated how exposure to nature affects health in residents of two inner city neighbourhoods in Berlin. The researchers investigated the links between different kinds of urban nature, including green spaces and views of vegetation from the home, and health. To do this, they assessed life satisfaction, perceived general health and levels of cortisol — commonly known as the stress hormone — in hair samples from 32 participants.

Changed patterns of cortisol in the blood have been linked to depression and psychological stress. Over time, elevated levels of cortisol suppress the immune system and can therefore also contribute to other illness. The authors hypothesised that the amount and diversity of vegetation visible from the home would affect health. They also thought that more regular use of public green spaces could encourage better health.

They found that views of vegetation from the home (as assessed by photographs) and the use of green spaces (determined by interview) were linked to the amount of cortisol in participants' hair. Participants' hair cortisol levels were lowest when their view was of both a high vegetation quantity and diversity. No significant link was found between the view from the home and self-reported general health or life satisfaction.

When assessing the use of green spaces, the researchers found one of the most frequently visited areas to be a local canal with a highly vegetated trail. People who used this trail at least once a week had significantly lower cortisol levels than less frequent users and reported higher life satisfaction, although they did not differ in general health.

Overall, this study suggests that exposure to urban nature in different forms could be related to lower cortisol levels and better life satisfaction, which corresponds with findings made in other countries and continents.

These results provide important considerations for urban development and suggest that adding diverse vegetation to residential streets and backyards, and developing more urban greenways, has the potential to improve human health. The authors recommend that local authorities use this information when designing sustainable and healthy urban areas.

While the authors do note limitations to the study, including sample size, the methods used to analyse vegetation and the extent to which cortisol correlates with stress and health outcomes, their findings have been reinforced by other research. They also propose that hair cortisol analysis could provide a promising new health indicator for future research.



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