

Green environments essential for human health

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Research confirms that the impacts of parks and green environments on human health extend beyond social and psychological health outcomes to include physical health outcomes. Credit: University of Illinois

Research shows that a walk in the park is more than just a nice way to spend an afternoon. It's an essential component for good health, according to University of Illinois environment and behavior researcher Frances "Ming" Kuo.

"Through the decades, parks advocates, landscape architects, and popular writers have consistently claimed that nature had healing powers," Kuo said. "But until recently, their claims haven't undergone rigorous scientific assessment."

Kuo is also the director of the Landscape and Human Health Laboratory

at the U of I and has studied the effect of green space on humans in a number of settings in order to prove or disprove the folklore notions.

"Researchers have studied the effects of nature in many different populations, using many forms of nature," Kuo said. "They've looked at Chicago public housing residents living in high-rises with a tree or two and some grass outside their apartment buildings; college students exposed to slide shows of natural scenes while sitting in a classroom; children with attention deficit disorder playing in a wide range of settings; [senior citizens](#) in Tokyo with varying degrees of access to green walkable streets; and middle-class volunteers spending their Saturdays restoring prairie ecosystems, just to name a few."

Kuo says that although the diversity of the research on this subject is impressive and important, even more important is the rigor with which the work was conducted.

"In any field with enthusiasts, you will find a plethora of well-meaning but flimsy studies purporting to 'prove' the benefits of X," Kuo said. "But in the last decade or so, rigorous work on this question has become more of a rule than an exception. The studies aren't simply relying on what research participants report to be the benefits of nature. The benefits have been measured objectively using data such as police crime reports, blood pressure, performance on standardized neurocognitive tests, and physiological measures of immune system functioning."

Kuo said that rather than relying on small, self-selected samples of nature lovers such as park-goers, scientists are increasingly relying on study populations that have no particular relationship to nature. One study examined children who were receiving care from a clinic network targeting low-income populations. Another looked at all United Kingdom residents younger than retirement age listed in national mortality records for the years 2001-2005.

"Scientists are routinely taking into account income and other differences in their studies. So the question is no longer, do people living in greener neighborhoods have better health outcomes? (They do.) Rather, the question has become, do people living in greener neighborhoods have better health outcomes when we take income and other advantages associated with greener neighborhoods into account?" That answer is also, yes, according to Kuo.

After undergoing rigorous scientific scrutiny, Kuo says the benefits of nature still stand.

"We still find these benefits when they are measured objectively, when non-nature lovers are included in our studies, when income and other factors that could explain a nature-health link are taken into account. And the strength, consistency and convergence of the findings are remarkable," she said.

Kuo drew an analogy to animals. "Just as rats and other laboratory animals housed in unfit environments undergo systematic breakdowns in healthy, positive patterns of social functioning, so do people," she said.

"In greener settings, we find that people are more generous and more sociable. We find stronger neighborhood social ties and greater sense of community, more mutual trust and willingness to help others.

"In less green environments, we find higher rates of aggression, violence, violent crime, and property crime—even after controlling for income and other differences," she said. "We also find more evidence of loneliness and more individuals reporting inadequate social support."

The equation seems too simple to be true.

- Access to nature and green environments yields better cognitive functioning, more self-discipline and impulse control, and greater mental health overall.
- Less access to nature is linked to exacerbated attention deficit/hyperactivity disorder symptoms, higher rates of anxiety disorders, and higher rates of clinical depression.

If that isn't convincing enough, Kuo says the impacts of parks and green environments on human health extend beyond social and psychological health outcomes to include physical health outcomes.

- Greener environments enhance recovery from surgery, enable and support higher levels of physical activity, improve immune system functioning, help diabetics achieve healthier blood glucose levels, and improve functional health status and independent living skills among older adults.
- By contrast, environments with less green space are associated with greater rates of childhood obesity; higher rates of 15 out of 24 categories of physician-diagnosed diseases, including cardiovascular diseases; and higher rates of mortality in younger and older adults.

"While it is true that richer people tend to have both greater access to nature and better physical health outcomes, the comparisons here show that even among people of the same socioeconomic status, those who have greater access to nature, have better physical health outcomes. Rarely do the scientific findings on any question align so clearly."

Because of this strong correlation between nature and [health](#), Kuo encourages city planners to design communities with more public green

spaces in mind, not as mere amenities to beautify a neighborhood, but as a vital component that will promote healthier, kinder, smarter, more effective, more resilient people.

Provided by University of Illinois at Urbana-Champaign

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