

Implications

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Vitamin G for Healthy Human Habitat

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A number of years ago, Enrique Penalosa, the former mayor of Bogotá, Colombia, observed that while we know a great deal about what constitutes healthy habitat for a whale or a mountain gorilla, we are far less clear about what constitutes a healthy habitat for human beings. In recent years, however, scientists worldwide have made major strides in identifying at least one key component in a healthy human habitat: green.

The Need for Green Places

Many studies have shown that human beings are “phytotropic.” We are attracted to environments that include trees, grass, and other natural elements. If *Homo sapiens*, like other species, are drawn to habitats in which they thrive, what are the consequences when human beings live in habitats with relatively few green places and green views? Do we actually need tree-lined streets, views of gardens, flowers, parks, and other natural elements in our lives to thrive? Ethology (the study of animal behavior, especially in their natural habitat) tells us that organisms housed in unfit habitats undergo physical, social, and psychological breakdown. Indeed, scientists in the US, Japan, and

the Netherlands are finding signs of breakdown where humans lack contact with nature.

When we compare individuals across the lifespan living with more or less “green” within 1 to 3 km (.62 -1.8 miles) of their residence, those with less access to green places report more medical symptoms and poorer health overall, regardless of income. Higher mortality rates among the elderly have been observed in places where people live without green, walkable spaces and paths nearby, again, regardless of income. There is a strong relationship between green places and physical health for those groups expected to be more tied to their home environments: children, older adults, and low-income individuals.

Research indicates that not only are there signs of physical breakdown (e.g., poorer health, more symptoms, higher mortality rates) in relatively barren areas, there are signs of social breakdown, as well. Even when taking into account architecture, resident income, and other factors, the less green an apartment building’s immediate surroundings, the more frayed its social fabric. Strength of community seems to suffer in the absence of green places and views; courtesy and mutual support are less common, residents use neighborhood common spaces less and children are left unsupervised more often,

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and graffiti, noise, litter, loitering, and illegal activity related to loitering increase. Most strikingly, both property crime and violent crime are more prevalent at addresses with relatively barren surroundings.

As the group suffers, so does the individual. There are signs of psychological breakdown in individuals living with less immediate access to green places and green views. Cognitive functioning is measurably worse. People are less likely to manage their major life issues in positive ways. Impulse control is poorer, as is delay of gratification. Aggression and violence are more frequent, which may be related to impairments in impulse control. For children with Attention-Deficit/ Hyperactivity Disorder (AD/HD), more severe symptoms are observed among children whose play environments are more barren regardless of family income.

A Solution: Vitamin G

What implications can environmental designers draw from these findings? Is it possible to conclude anything more than “green is good?” While far from conclusive, the available evidence suggests that designers should think of the benefits of green places, elements, and views as operating much like a vitamin (i.e., Vitamin G for Green)

Vitamin G seems to be beneficial regardless of its physical form. Research shows that the benefits of nature seem to extend to a tremendous variety of stimuli (e.g., large forests, small urban gardens, prairies, nature preserves, vest-pocket parks, mountains, landscapes with water features, an aquarium in an office, tree-lined city streets, shady backyards, soccer fields).

Much like a vitamin that you can eat, or drink, or rub on your skin, Vitamin G can be taken in many ways. Research shows the benefits of nature extend to many different avenues of exposure. Contact with nature need not involve getting one’s hands in the dirt. Gardening and ecological restoration are beneficial, but so is taking a walk or a jog, or a bike ride, or a canoe trip through a natural setting. It seems that even conducting non-nature focused activities, such as reading or playing basketball, in a relatively green setting are more beneficial than the same activities indoors or in a less green outdoor setting. Even a simple window view has measurable effects.

Also like a vitamin, the available evidence suggests that contact with nature is needed in frequent, regular doses. Going on a two-week canoe trip once a year may be helpful, but it’s not sufficient. Relatively little is known about the effects of different length exposures or how long the benefits of an exposure last. The right frequency of Vitamin G intake is probably



closer to once a day than once a week. Small doses of Vitamin G, such as a green view from an office window, might be helpful on a continual basis over a number of hours.

Finally, Vitamin G doesn't do people much good if they can't take it. In the research described above, a striking and consistent finding is that people show different patterns of functioning and health depending on the natural characteristics of the settings in which they spend their time. For example, inner city residents living in a building facing a few shade trees, performed better on cognitive and other tests than their neighbors living in identical buildings with no trees. Similarly, Tokyo residents who have green, walkable spaces and paths near their residence lived longer than other residents with similar income who did not have access to walkable paths.

Design Implications

By thinking of green places and views in this way it is not difficult to come up with design implications that maximize exposure to Vitamin G.

- Integrate natural elements into routine, daily activities. Introduce more green into places where individuals spend a lot of time, or spend time regularly (e.g., schools, homes, workplaces, daycare centers, hospitals, and long-term care facilities).
- Make daily commutes green. Better yet, maximize health benefits by making daily commutes active and green.
- Introduce more green into places used by large numbers of people (e.g., airports, shopping malls, campuses, major transportation corridors, plazas).
- Facilitate access to places that are already green, but where few visit. Provide hiking paths through restricted nature preserves or establish monthly "no fee" days at state parks to improve access.
- Make spending time in, and moving through, parks and other green outdoor places safe, pleasant, and rewarding.



- Give people more reason to use green paths by designing them with more destinations and easier access.
- Select and design sites to both increase access to nature and add to the diversity of ways people can experience nature. A diverse palette of green places has at least two advantages. It can help reach individuals with different aesthetic preferences, and it may encourage individuals to experience nature in more ways, more frequently.
- Make views from frequent vantage points green (e.g., views from offices, homes, and classrooms).
- Design, operate, and maintain outdoor spaces to encourage gardening, stewardship, and other direct engagement with nature.
- Design, operate, and maintain green outdoor spaces that facilitate both non-green focused activities (e.g., reading in a hammock, sharing a meal outdoors) and green activities (e.g., gardening, nature walks).
- Create systems and hierarchies of green outdoor places and paths with major green nodes (e.g., Central Park), many smaller green areas (ranging from neighborhood parks to soccer fields), and myriad pockets of green (from window boxes to median plantings).



Rethinking Nature's Value

Urban nature is often viewed as an amenity, or as “the parsley around the pig.” The demonstrated impacts of urban nature on both environmental and human health makes it clear that trees and parks can no longer be viewed simply as decorative elements, or mere beautification. Further, research suggests that a handful of large parks is far from sufficient. To reap the health benefits of nature, urban dwellers need green places and views to be a part of their everyday surroundings, including the particular vantage points, paths, and spaces that constitute their day-to-day world. The tight integration of natural elements into the urban fabric can now be thought of as preventive medicine—a public health measure designed to reduce physical, social, and psychological breakdown in urban dwellers. Roof gardens, posters of natural scenes, street-side trees and hedges, median gardens, planter boxes, and vest-pocket gardens can all help promote human health and functioning in urban areas. It would seem that humanity's predilection for natural elements is not a mere fancy. The evidence strongly suggests that the desire for green environments reflects an innate search for a fit habitat.

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Related Research Summaries

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—*Space and Culture*

“Benefits of Urban Parks”
—*Landscape and Urban Planning*

“Green Space Improves Interaction Among Elderly Residents” —*Environment and Behavior*

“Green Space Influences Public Housing Residents”
—*Environment and Behavior*

“Inner City Children Benefit from Green Spaces”
—*Environment and Behavior*

“Street Parks Promote Neighborliness”
—*Journal of Architectural and Planning Research*

“Window Views Affect Well Being and Residential Satisfaction” —*Environment and Behavior*

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