

How Nature Resets Our Minds and Bodies

The research behind an understanding that natural environments refocus our attention, lessening stress and hastening healing

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Paoli, Pennsylvania, is a small town with a local suburban hospital. Patients at [Paoli Memorial](#) recover in a row of rooms facing a small courtyard. In the early 1980s, a researcher visited the hospital and [gathered information about patients](#) who had undergone gallbladder surgery between 1972 and 1981. Gallbladder surgery is routine and generally uncomplicated, but most patients in the 1970s recovered for a week or two before they returned home. Some took longer to recover than others, and the researcher wondered whether subtle differences between the hospital rooms might explain this discrepancy. Some of the rooms on one side of the hospital faced onto a brick wall, whereas others slightly farther down the corridor faced onto a small stand of deciduous trees. Apart from their differing views, the rooms were identical.

People who are exposed to natural scenes aren't just happier or more comfortable; the very building blocks of their physiological well-being also respond positively.

When the researcher looked at their recovery charts, he was struck by how much better the patients fared when their rooms looked out onto the trees rather than the brick wall. On average, those who faced the brick wall needed an extra day to recover before returning home. They were also far more depressed and experienced more pain. On average, their nurses recorded four negative notes per patient -- comments like "needs much encouragement" and "upset and crying" -- whereas those with a view of the trees warranted negative notes only once during their stay. Meanwhile, very few of the patients who looked out onto the trees required more than a single dose of strong painkillers during the middle part of their stay, whereas those facing the wall required two or even three doses. Apart from their view, the patients were very similar, and they had received identical treatment at the hospital. Each patient with a view of the trees was matched with a patient whose room looked out onto the brick wall, so that their age, gender, weight, status as smokers or nonsmokers, and attending doctors and nurses were controlled as tightly as possible. Since those factors were controlled, the only explanation was that patients who looked out at a stand of trees recovered more quickly because they were lucky enough to occupy rooms with a natural view.

These results are surprising because the effects are so large -- much larger than the effects of many other targeted treatment interventions. By some measures, patients who gazed out at a natural scene were four times better off than those who faced a wall. Strong results usually inspire skepticism, but [plenty of studies have shown similar effects](#). [In one of those studies](#), two environmental psychologists approached 337 sets of parents who lived with their children in five rural communities in upstate New York. They scored the "naturalness" of each family's home, awarding points for natural views, indoor plants, and grass-covered yards. Some of the children had experienced little stress growing up, rarely fighting or getting punished at school, but others were bullied and struggled to get along with their parents. When the researchers measured the happiness and well-being of the students in their study, they noticed that those who had experienced hardship were distressed and lacking in self-esteem -- except when they lived in more natural

environments. The presence of nature seemed to buffer them against the stresses that hampered other children who lived in predominantly man-made environments.

[In an even more direct test](#), researchers asked a hundred sets of parents with children who suffered from attention deficit disorder how their children responded to different playtime activities. Children who have ADD are often restless and distracted. But the parents reported that green activities -- like fishing and soccer -- left their children in a far more relaxed, focused state. It wasn't that the children who spent time outside were merely happier, more likely to interact with friends, or more active -- in fact, those who sat indoors, in a room with natural views, were calmer than children who played outside in man-made environments that were devoid of grass and trees.

What is it that sets natural environments apart from others? Why shouldn't a quiet streetscape have the same effect as a quiet natural landscape, for example? Architecture has its own beauty, and some people prefer urban environments to natural environments, so why does nature alone seem to have such powerful restorative effects? The answer is that natural environments have a unique constellation of features that sets them apart from man-made locations. Just before the dawn of the twentieth century, William James, one of the early giants of modern psychology, [explained that human attention comes in two different forms](#). The first is directed attention, which enables us to focus on demanding tasks like driving and writing. Reading a book also requires directed attention, and you'll notice that you start to zone out when you're tired, or when you've been reading for hours at a time. The second form is involuntary attention, which comes easily and doesn't require any mental effort at all. As James explained, "Strange things, moving things, wild animals, bright things, pretty things, words, blows, blood, etc., etc., etc." all attract our attention involuntarily.

Forests, streams, rivers, lakes, and oceans demand very little from us.

Nature restores mental functioning in the same way that food and water restore bodies. The business of everyday life -- dodging traffic, making decisions and judgment calls, interacting with strangers -- is depleting, and

what man-made environments take away from us, nature gives back. There's something mystical and, you might say, unscientific about this claim, but its heart actually rests in what psychologists call [attention restoration theory](#), or ART. According to ART, urban environments are draining because they force us to direct our attention to specific tasks (e.g., avoiding the onslaught of traffic) and grab our attention dynamically, compelling us to "look here!" before telling us to instead "look over there!" These demands are draining -- and they're also absent in natural environments. Forests, streams, rivers, lakes, and oceans demand very little from us, though they're still engaging, ever changing, and attention-grabbing. The difference between natural and urban landscapes is how they command our attention. While man-made landscapes bombard us with stimulation, their natural counterparts give us the chance to think as much or as little as we'd like, and the opportunity to replenish exhausted mental resources.

Healers in Japan and Germany have [long heralded the benefits of natural therapy](#), recognizing that humankind has spent 99.99 percent of its history living in natural environments. The Japanese version of natural therapy is shinrin-yoku, or forest bathing, which requires that patients walk for extended periods through forested areas while inhaling woodsy scents that complement the sylvan atmosphere. German Kneipp therapy similarly requires that patients perform physical exercises in forest clearings. These alternative therapies aren't just idle cultural quirks, and researchers have found that patients enjoy a wide range of benefits. Among others, compared with people who walked through urban areas, shinrin-yoku patients had lower blood pressure, lower pulse rates, and lower cortisol levels, a marker of reduced stress. People who are exposed to natural scenes aren't just happier or more comfortable; the very building blocks of their physiological well-being also respond positively to natural therapy.

Natural environments promote calmness and well-being in part because they expose people to low levels of stress. These stressful experiences are tame in comparison with the trials and tribulations that most of us associate with stress -- workplace drama, traffic jams, and wailing children on international plane trips. Humans thrive with some stimulation, but we're incapable of coping with extreme stressors, which push us from the comfortable realm of eustress (good stress) to the danger zone of distress (bad stress).

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Interesting locations, including busy natural environments, are so beneficial that physicians have begun to suggest that they might offer a cheap and effective way to lessen the effects of certain cancers. [One team of researchers](#) showed that women who were recently diagnosed with early-stage breast cancer were far more capable of completing challenging mental tasks when they immersed themselves in natural environments for two hours each week for approximately two months. The interventions began when the women were diagnosed, and continued beyond surgery into the recovery period. Like many distressed patients who begin to battle life-threatening illnesses, the women struggled to complete difficult mental tasks shortly after they were diagnosed. Those who spent time in natural environments improved progressively, regaining their capacity to devote attention to demanding mental puzzles. Meanwhile, the patients who were not exposed to the nature-based intervention tended to struggle with similar tasks throughout the test period.

Attention is obviously a long way from recovery, but patients with sharper minds often respond better to treatment, stick to their treatment regimens, and behave more proactively during recovery. Of course, nature is not a panacea, but it's an inexpensive and effective tool for dampening the impact of illness, and dulling the intrusion of everyday stress.