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Personal Journal

The Leafy Green Road to Good Mental Health

New Science Points to Benefits of Weeding, Watering Gardens

By MICHAEL WALDHOLZ

Staff Reporter of *THE WALL STREET JOURNAL*

Stuck in an emotional funk after a personal loss, Janice Mawhinney couldn't muster the enthusiasm to tend her backyard garden in Toronto for three years. Then, inexplicably, one day this past spring, she found herself vigorously weeding again, her spirits slowly blossoming along with a long-concealed blue lupine, a pink and white bleeding heart, several Shasta daisies, and a host of other recovered plants.

As Ms. Mawhinney restored the garden, it in turn helped restore her.

Now, "every morning I rush to look out at all the color through my bathroom window," says Ms. Mawhinney, a 58-year-old reporter at the *Toronto Star*. "In just a few minutes I feel refreshed."

Common sense and experience tell us that hiking in the wild or working in a garden can be emotionally restorative. Now, scientists are beginning to understand why: Gardening, or simply observing a lush landscape, holds a powerful ability to promote measurable improvements in mental and even physical health.

Vertical gardening methods like this at the Chicago Botanic Garden's Buehler Enabling Garden not only promote easy tending but also clearly outline planting areas for people with low vision.

Building on the science, a new practice of horticulture therapy is sprouting. Increasingly, hospitals are using the insights of environmental psychologists to build small but elaborate gardens for patients, visitors and even stressed-out doctors. Some urban botanical gardens and health-rehabilitation centers are creating so-called healing gardens with horticultural-therapy programs that teach patients and the public about the recuperative effect the natural world has on the human psyche.

"If a researcher had seriously proposed two decades ago that gardens could improve medical outcomes, the position would have been met with skepticism by most behavioral scientists, and with derision by most physicians," says Roger Ulrich, a Texas A&M University professor and a leading researcher in the effects of environment on behavior. "We now have studies showing that psychological and environmental factors can affect physiological systems and health status."

One study published in June found that people who were exposed to nature recovered from stress more quickly than others who weren't; what's more, the positive effects took hold within just a few minutes. Dr. Ulrich's research has showed that hospitalized patients whose windows looked out at landscape scenery recovered from surgery more quickly than those without such access. Other studies have found that simply viewing a garden or another natural vista can quickly reduce blood pressure and pulse rate and can even increase brain activity that controls mood-lifting feelings.

A growing body of evidence suggests that humans are hard-wired not just to enjoy a pleasant view of nature, but to actually exploit it, much like a drug, to relax and refresh after a stressful experience. Our earliest ancestors, Dr. Ulrich theorizes, likely needed a way to swiftly recover from a traumatic experience such as a hunt, a battle or an attack from a wild animal. "You can imagine that those who could look out at the open savannah, seeing its safety and tranquility, and quickly feel calm but also alert to their environment would likely have a survival benefit over others," Dr. Ulrich says.

Scientists have documented this restorative effect in a number of controlled experiments. In the study published in the June issue of the *Journal of Environmental Psychology*, Terry Hartig and colleagues at the University of California at Irvine measured markedly different physiological, attentional and mood changes in test subjects exposed to natural or urban settings.

In the experiment, 112 young

adults were assigned a variety of stressful tasks, including driving to a site they hadn't visited before.

Afterward, the people who sat in a room with tree views and then walked through a nature preserve showed declining blood pressure and substantially more positive change in their feelings than those who sat in a windowless room and then walked in an area of medium-density urban development.

Some of the changes could be measured within minutes of being exposed to the natural settings, says Dr. Hartig, now at Uppsala University in Gavle, Sweden. He provides advice to several European cities whose planners are considering expanding so-called urban forests.

"Immediate Calming Effect"

James Raimes, 64 years old and retired from publishing, experiences an effect like this when he returns to his modest country home in Chatham, N.Y. "The sounds, the smells, and the sights have an immediate calming effect as soon as I step out of the car," Mr. Raimes says.

Many gardeners say they lose track of time while weeding, planting or mulching. "I can and often do garden from sunup to sundown, to the exclusion of many other things in my life," Mr. Raimes admits. Indeed, as people who move to fecund environments like Florida's can attest, the biological draw of gardening can be powerfully addictive, though it's clearly a much safer outlet than other addictions.

Many cultures have long understood the harmonizing influences of flora. Henry Thoreau, the early American naturalist, wrote persuasively about the impact of nature on human well-being in his book, *Walden.* The

pioneering landscape architect, Frederick Law Olmsted, "understood the need for fatigued urban dwellers to recover their capacity to focus in the context of nature," says Stephen Kaplan, who, along with his wife, Rachel, at the University of Michigan has helped found the field of environmental psychology. In the 1860s, Mr. Olmsted employed his insights in designing New York City's Central Park, with its acres of rambling walks and natural vistas, as well as a host of other city parks modeled after it.

"The gardens of the ancient Egyptian nobility, the walled gardens of Persian settlements in Mesopotamia, and the gardens of merchants in medieval Chinese cities indicate that early urban peoples went to considerable lengths to maintain contact with nature," according to Texas A&M's Dr. Ulrich. More recently, Harvard zoologist Edward O. Wilson has written extensively on this natural affinity, which he calls "biophilia" and defines as a partly genetic tendency by humans to respond positively to nature.

The latest research and writings are serving as the intellectual basis for the relatively new practice of horticultural therapy. Practitioners say their experience shows that gardening can have an especially beneficial mental-health impact because it provides a sense of control, a psychological counter to stress and anxiety. This is especially important for patients who are recovering from stroke or other traumas or are learning to live with a physical or mental disability, says Teresia Hazen, who oversees horticulture-therapy programs for Legacy Health System in Portland, Ore.

"For patients who find themselves restricted by a disability, even the simplest gardening experience, such as growing a potted plant from a cutting, gives them a feeling of control," says Ms. Hazen. "Gardening, more than most rehab activities, has the ability to be very distracting," she adds, noting that simply taking people's minds off their problems alleviates pain and depression.

"A Source of Relief"

Ms. Hazen recently helped design an award-winning garden in Legacy's Good Samaritan Hospital that has a dual purpose. Rehab patients receive therapy in it, she says, but also "many doctors and nurses just come by and sit or stroll or just stand and gaze, maybe just for a few moments. It's easy to see it draws them and is a source of relief."

Now, several city-run botanical gardens are hiring horticulture therapists to run public programs to expose city dwellers to nature's therapeutic benefits. Chicago's Botanic Garden provides a range of horticultural-therapy services - including planting, weeding, cultivating, watering and harvesting - both to private health agencies that treat the handicapped and to people who come in off the street.

Even some prisons are looking to gardens for relief. The New York Horticultural Society directs one such program, called the Greenhouse Project, at New York's Riker's Island facility. Inmates work

in the garden, but some have also been allowed out to build gardens in public spaces throughout the city.

Several schools of architecture now have academics on staff who specialize in studying what kinds of gardens are most likely to attract users. "Some hospitals just throw in a few bushes and trees and hope they are accomplishing the wanted effect," says Clare Cooper Marcus, a professor at University of California, Berkeley, who has traveled the world analyzing gardens in health-care settings. A better garden, she says, "allows people to interact with the natural setting."