

# Bringing Calm to Alzheimer's Patients with the 'Secret Power' of the Garden

## Researchers surprised to see patients remember the chirping of a cricket 10 days later

By Judith D. Schwartz



Credit: James Brosius

Researchers found that Alzheimer's patients experienced reduced stress after periods of sitting in a Japanese garden

Many find Japanese gardens, with their interplay of movement, form and texture, to be tranquil and soothing; indeed, such gardens have been used for meditation for hundreds of years.

Now new research from two Rutgers professors suggests they may offer tangible healing results for vulnerable populations, including late-stage Alzheimer's patients. Seiko Goto, Assistant Professor of Landscape Architecture at the [School of Environmental and Biological Sciences](#), says that in a preliminary trial, after brief periods of sitting in a Japanese garden Alzheimer's patients experienced reduced stress and enhanced well-being.

"Japanese gardens can be very small and installed indoors," says Goto, who together with Karl Herrup, Professor and Chair of Cell Biology and Neuroscience, has received an [Academic Excellence Fund](#) grant for The Garden as Therapeutic Tool: Managing Behavioral and Cognitive Systems in Alzheimer's Dementia in the Nursing Home. "They can be put in anywhere at low cost. If they reduce stress, this could mean lower healthcare costs, less medicine and fewer calls to the nurse. This could have huge implications."

The project got its start four years ago on the [Rutgers Faculty Traveling Seminar](#), run by the university each year since 2004. (The tours were cancelled in 2009 and 2010 due to the economic downturn.)

Goto and Herrup, a noted Alzheimer's researcher who served for several years as the director of an Alzheimer's Center in Cleveland, Ohio, began talking – and that casual “nice-to-meet-you” conversation has since evolved into a full-fledged research collaboration that could yield important applications for medical settings.

The initial step was a survey of residents at the Medford Lees Continuing Care Community. The Medford facility has a series of courtyards with 32 gardens, and residents were asked which they preferred. “The Japanese gardens scored highest. The herb gardens scored lowest,” recalls Goto. “Japanese gardens significantly reduced stress. We confirmed this with a heart-rate test comparing the Japanese garden, the herb garden, and an unstructured space with a single tree.”

Why the difference? In short, the subtle nature of the herb garden wasn't appealing to older people, who typically have poorer vision.

“People who didn't like the herb garden said it was “weedy,” Goto said. “A Japanese garden has a viewpoint, shade and sun, and a meandering, natural flow for the eye.”

This fall, Goto created a small Japanese garden in a room at one end of the Alzheimer unit at the Francis E. Parker Memorial Home and introduced several residents to the garden during 15-minute sittings twice a week. In these brief exposures, “interesting things happened,” Goto says.

“Many of these patients don't know who they are,” she said. “Many get confused at a certain time of day. Yet immediately upon being in the garden they calmed down, even if they were in the midst of screaming. They smiled and stayed calm for the rest of the day. The doctor said this was more effective than medications that can take time to work and leave patients listless.”

One seemingly minor event in particular caught the attention of Herrup, whose research specialty is the biology of nerve cell loss during certain degenerative illnesses. At one point during the testing, there was a cricket singing in a chrysanthemum plant. Due to a scheduled safety inspection, 10 days passed before the next garden visit. Yet when they returned to the garden, two of the four patients who had heard the chirping asked: “Where is the cricket?”

Here were people who could not recall what happened a few hours ago, and yet they remembered that subtle chirping ten days later. “That these people could associate the cricket with the garden after one brief exposure – and retained this association for ten days, basically gave me goose bumps,” Herrup says. “The caveat is that in a rigorous sense, this has to be recognized as anecdotal, qualitative data. For right now, however, the results are a strong incentive for us to keep going.”

The project has helped Goto appreciate anew the aesthetic she grew up with. “In Japan, gardens are all over the place. You take them for granted,” she says. “But I've never known anyone to speak about it in a scientific way.” She said there is a body of research on the healing effects of

nature, including horticulture therapy, which requires physical participation. But this is the first study she knows of that focuses solely on the visual aspect of gardens.

Goto is pleased to be at Rutgers not only for the research opportunities and support, but because the climate is conducive to Japanese gardens.

“New Jersey has a climate similar to Japan,” she says. “Here a student in landscape architecture will know more Japanese species than native U.S. species. I thought the appeal of Japanese gardens was cultural, but it attracts many people outside the culture.”

And that, she added, can only help her quest to understand what she calls “the secret power of the garden” and to bring that to the world of healing.

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