

Worth Contemplating

Scientists and scholars examine the power of meditation.

By Clifton B. Parker

Take a deep breath into your belly, exhale slowly and contemplate these scientific findings: People who routinely practice meditation may be better able to deal with the ups and downs of the human condition.

That's the conclusion of UC Davis researchers who are leading one of the world's most in-depth and closely watched scientific examinations of the subject. Who's watching? The Dalai Lama, among others.

Anecdotal testaments to meditation's benefits have abounded since antiquity, but the Shamatha Project aims to investigate its concrete benefits. The 10-year project is yielding its first findings, and researchers are poised to release more in the near future.

Clifford Saron, a research neuroscientist at the UC Davis Center for Mind and Brain and the MIND Institute, is the team leader of the Shamatha Project, which also includes the Santa Barbara Institute for Consciousness Studies, the Shambhala Mountain Center, UC Davis colleagues and other scientists from around the world.



(Photo: Karin Higgins/UC Davis)

Saron said, "The Shamatha Project explores whether well-developed attention is useful in changing the thought processes that evoke negative emotions such as anger, contempt and disgust, which may hinder the expression of love and compassion."

The name shamatha means "calm abiding" in Sanskrit. For the Shamatha Project, 60 participants meditated in two groups of 30 for about seven hours a day seven days a week over three months in a 2007 study at the Shambhala Mountain Center in Colorado. More than 30 investigators, scientists and Buddhist scholar Alan Wallace have been involved in the huge data-collecting effort, now under analysis.

Improved mental focus

Earlier this spring, the group published its first findings, which showed that people undergoing intensive meditation training became better at making fine visual distinctions and sustaining attention during a 30-minute test. This means that improved perception, often claimed to be a benefit of meditation practice, underlies improvements in sustained attention.

The lead author was Katherine MacLean, a recent UC Davis psychology doctoral graduate.

The ability to sustain attention, previous research shows, can help with regulating emotions, reducing depression and controlling anger, said psychology professor Phillip Shaver, a senior investigator on the Shamatha Project since its earliest days in 2003.

The group's next research paper, due out this fall, will describe the benefits of meditation in "self-regulation" and "emotional well-being." In other words, meditation may help someone who is frustrated become more aware of this feeling, and thus better able to control the impulsive behavior that could ensue. Postdoctoral researcher Baljinder Sahdra is the lead author for this paper.

The two studies are just a beginning, Saron and colleagues said. They expect even more far-reaching findings in the years ahead.

"Some of our research results even suggest that meditation also has desirable physiological effects that might increase a person's lifespan," Shaver said.

Nevertheless, Shaver said he has little time to meditate himself. He works 60–70 hours a week, and has a host of time commitments, like editing several books and making breakfasts and school lunches for his two daughters.

"My schedule doesn't leave much time for meditation," said Shaver. "My own goal is to understand meditation, not necessarily to practice it."

Looking at longevity

The Shamatha Project is exploring effects of meditation on cellular aging.

"Research shows that stress is bad for cells," said Saron, noting that longevity may be related to the enzyme known as telomerase in our cells that repairs the shortening of chromosomes that occurs throughout life.

"We are looking at the telomerase levels of people who practice meditation to see whether or not these levels change after a three-month program of meditation."

The results are promising, Saron said, and an article has been accepted for publication in *Psychoneuroendocrinology*. For this study, postdoctoral scholar and UC Davis alumna Tonya Jacobs is also working with UC San Francisco psychologist Elissa Epel, Elizabeth Blackburn and their colleagues. Blackburn, a biological researcher, was a co-winner of the 2009 Nobel Prize in Physiology or Medicine for research on telomeres, aging and cancer.

The Shamatha Project studies are being welcomed by many meditation proponents.

Buddhist scholar Thubten Jinpa says the study of meditation and brain science promises important discoveries for a greater understanding of our mental reality, one capable of developing a "comprehensive taxonomy of our mental world." Also, meditation may help to "reintroduce introspection" as a legitimate means of scientific inquiry.

The Dalai Lama, the Nobel Prize-winning spiritual leader and Tibet's exiled head of state, has been a close friend of Saron's for years. The scientist has kept him informed about the Shamatha Project's progress.

"I believe this research project has the potential to be of significant benefit for advancing scientific understanding of the effects of meditation on attention and emotional regulation," the Dalai Lama wrote in a 2006 letter to the Shamatha team.

Meditation, he noted, lessens "the inner causes of suffering" and brings forth "the potentials of human consciousness in today's world."

East and West

Saron has been interested in meditation since the 1970s. In the 1990s, he organized a field study of adept practitioners, conducted under the auspices of the Dalai Lama's private office and of the Boulder, Colo.-based Mind and Life Institute. During that project, he was inspired by meeting exiled Tibetan monks and yogis in the Indian foothills of the Himalayas who had achieved remarkable emotional calm, focus and joyfulness in their lives, sometimes despite great hardship and suffering.

As Saron explains, meditation teaches practitioners to be more aware of their present conditions while learning to meet challenges without getting overwhelmed. "In meditation, you learn that just about anything is a workable situation, if your mind is ready for it," he said.

You don't have to be a monk or yogi to learn to meditate effectively, Saron said. "Training the mind is possible for the vast majority of people. It is akin to toning our muscles through physical exercise."

Different forms of meditation are practiced in both Eastern and Western spiritual traditions. In the East, Buddhists have long practiced bhavana — pronounced BAH-van-na — a Sanskrit term that is often translated as "meditation." It means "to cultivate" beneficial qualities like kindness and attention, while becoming more familiar with one's own mind. In the West, Judeo-Christian teachings include meditations on the human soul and conscience.

The Shamatha Project receives its major support from the Fetzer Institute and the Hershey Family Foundation, along with other donors.

Making meditation accessible

Alan Klima, a UC Davis anthropology professor and Theravada Buddhist meditator, hopes that meditation can be practiced more widely and made more available in the West.

He is writing a book about Buddhist meditation and the West under the working title of *The Meditation Machine*.

"The biggest cross-cultural difference is that anyone in Thailand or Burma, rich or poor, has free access to meditation teachings, support, even residential facilities, due to the system of faith and generosity that has been the 'meditation machine' in those countries," he said.

Freeing the mind

Meditation instructors talk about what meditation is, and isn't. [Read more...](#)

Building a similar "mediation machine" in the West means integrating the practice within health care and insurance systems, just like any other form of physical or psychological treatment, Klima said.

He attests to the personal benefits of meditating. "Everything that is good in my life is directly connected to the practice of meditation — my ability to cohabitate with the almost constant insanity of my own mind, my relationships, my job, my writing, everything," Klima offered.

While he advocates the scientific confirmation of meditation's benefits, the anthropologist believes that science alone cannot fully explain its power.

"The humanities and social science approaches are far broader in scope, and can even include the findings of scientists and place these findings in their social context. The research scientists can paste EEG electrodes to my scalp while I write a book about meditation science, but I am not sure that will yield anything meaningful," he said.

Erika Rosenberg, a meditation teacher and expert on facial expressions of emotion, is a member of the Shamatha Project. She said the project's findings could help more people discover the benefits of meditation.

"Science is a language that speaks powerfully to many people," Rosenberg said, "including those who are predisposed to be highly skeptical of practices linked to spiritual traditions."

Ultimately, meditation is mind training, she said.

"I try to emphasize this in my teaching as well. And when you train the mind in a disciplined set of practices over time, you see benefits."

She added, "There is nothing mystical about it."

Patience, perspective

Beth Cohen is a meditation instructor and director of the UC Davis Academic and Staff Assistance Program, which provides counseling to faculty, staff and their families.

"I found meditation based in necessity, not interest," she said.

At 36, Cohen was diagnosed with an autoimmune disease, and traditional Western medicine was unable to improve her condition. That's when she discovered meditation.

"It not only assists in managing my disease, it also provides me with more mental clarity, patience and perspective," said Cohen.

"A daily meditation practice, for even just 10 to 20 minutes, actually creates change in those parts of the brain that promote happiness, positive thoughts and emotions," said Cohen, noting benefits in increased awareness, mental clarity, managing chronic pain, lowered blood pressure, and coping with anxiety and depression."

That may explain the popularity of a lunchtime meditation class she teaches on campus. The class drew about 25 people when Cohen started it three years ago, and now typically enrolls more than 100 when it's offered. She estimates she's taught meditation to more than 1,000 people in the past nine years.

"These benefits can be very helpful to UC Davis employees during stressful times like these," she said. Learning to work with your mind is a "no brainer."

Learn more about the [Shamatha Project](#).

Clifton Parker is associate editor of UC Davis Magazine.

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