Mindfulness from meditation associated with lower stress hormone

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The findings come from the Shamatha Project, a comprehensive long-term, control-group study of the effects of meditation training on mind and body.

(Medical Xpress)—Focusing on the present rather than letting the mind drift may help to lower levels of the stress hormone cortisol, suggests new research from the Shamatha Project at the University of California, Davis.

The ability to focus mental resources on immediate experience is an aspect of mindfulness, which can be improved by meditation training.

"This is the first study to show a direct relation between resting cortisol and scores on any type of mindfulness scale," said Tonya Jacobs, a

postdoctoral researcher at the UC Davis Center for Mind and Brain and first author of a paper describing the work, published this week in the journal *Health Psychology*.

High levels of cortisol, a hormone produced by the adrenal gland, are associated with physical or emotional stress. Prolonged release of the hormone contributes to wide-ranging, adverse effects on a number of physiological systems.

The new findings are the latest to come from the Shamatha Project, a comprehensive long-term, control-group study of the effects of meditation training on mind and body.

Led by Clifford Saron, associate research scientist at the UC Davis Center for Mind and Brain, the Shamatha Project has drawn the attention of both scientists and Buddhist scholars including the Dalai Lama, who has endorsed the project.

In the new study, Jacobs, Saron and their colleagues used a questionnaire to measure aspects of mindfulness among a group of volunteers before and after an intensive, three-month meditation retreat. They also measured cortisol levels in the volunteers' saliva.

During the retreat, Buddhist scholar and teacher B. Alan Wallace of the Santa Barbara Institute for Consciousness Studies trained participants in such attentional skills as mindfulness of breathing, observing mental events, and observing the nature of consciousness. Participants also practiced cultivating benevolent mental states, including loving kindness, compassion, empathic joy and equanimity.

At an individual level, there was a correlation between a high score for mindfulness and a low score in cortisol both before and after the retreat. Individuals whose mindfulness score increased after the retreat showed a

decrease in cortisol.

"The more a person reported directing their cognitive resources to immediate sensory experience and the task at hand, the lower their resting cortisol," Jacobs said.

The research did not show a direct cause and effect, Jacobs emphasized. Indeed, she noted that the effect could run either way—reduced levels of cortisol could lead to improved mindfulness, rather than the other way around. Scores on the mindfulness questionnaire increased from pre- to post-retreat, while levels of cortisol did not change overall.

According to Jacobs, training the mind to focus on immediate experience may reduce the propensity to ruminate about the past or worry about the future, thought processes that have been linked to cortisol release.

"The idea that we can train our minds in a way that fosters healthy mental habits and that these habits may be reflected in mind-body relations is not new; it's been around for thousands of years across various cultures and ideologies," Jacobs said. "However, this idea is just beginning to be integrated into Western medicine as objective evidence accumulates. Hopefully, studies like this one will contribute to that effort."

Saron noted that in this study, the authors used the term "mindfulness" to refer to behaviors that are reflected in a particular mindfulness scale, which was the measure used in the study.

"The scale measured the participants' propensity to let go of distressing thoughts and attend to different sensory domains, daily tasks, and the current contents of their minds. However, this scale may only reflect a subset of qualities that comprise the greater quality of mindfulness, as it

is conceived across various contemplative traditions," he said.

Previous studies from the Shamatha Project have shown that the meditation retreat had positive effects on visual perception, sustained attention, socio-emotional well-being, resting brain activity and on the activity of telomerase, an enzyme important for the long-term health of body cells.

Provided by UC Davis