

Study: Can meditation sharpen our attention?

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(PhysOrg.com) -- A new study at the University of Wisconsin-Madison suggests that people can train their minds to stay focused.

The study, led by UW-Madison scientist Antoine Lutz, involved subjects interested in meditation in an effort to see whether voluntary mental training can affect attention. Results suggest that attention stability is not a fixed capacity, and that it can be improved by directed mental training, such as meditation.

"Everyone is familiar with daydreaming," says Lutz, who works jointly with the Waisman Brain Imaging Lab and the new Center for Investigating Healthy Minds. "These momentary lapses into mind-wandering occur even when a person is trying to stay focused on a chosen object. The difficulty of focused attention is evident both in everyday experiences and in the laboratory."

Being able to sustain attention on a chosen object through time is a critical component of attention regulation, explains the study's senior scientist Richard Davidson, director of the Center for Investigating Healthy Minds and professor of psychology and [psychiatry](#) at UW-Madison.

"In untrained individuals, one gets easily distracted, requiring a refocusing of attention," says Davidson. "Such ongoing fluctuations in attention stability are thought to reflect competitive interactions between task-related and task-unrelated processes, such as mind-wandering. Our work holds that the capacity to stabilize attention is best regarded as a skill that can be trained."

Participants were presented with frequent standard and rare deviant tones in both ears, and asked to pay attention only to tones presented in one ear and to press a button each time they detected an intermittent deviant tone. Deviant tones were slightly higher in frequency than standard tones. Lutz and colleagues investigated the moment-to-

moment stability of attention by quantifying the trial-to-trial variability of both [reaction time](#) in response to attended deviant tones and consistency of brain responses, as measured by electroencephalography (EEG).

"This measure of variability in both the behavioral and [brain response](#) was particularly relevant," explains Lutz. "Attention deficit hyperactivity disorder (ADHD) patients typically show larger intra-individual variability in reaction time than controls during performance of sustained attention tasks. This variability is thought to reflect a more pronounced distractibility and poor attention for ADHD patients than controls. We hypothesized that meditation training would reduce this form of variability."

The new study showed that three months of rigorous training in Vipassana [meditation](#) improved people's ability to stabilize attention on target tones, as indicated by both a measure of consistency of brain response and reduced reaction time variability. Furthermore, those individuals who showed the greatest increase in neural response consistency showed the largest decrease in reaction time variability.

"The finding that attention is a flexible skill opens up many possibilities," says Lutz. "For example, attention training is worth examining for disorders like [attention](#) deficit hyperactivity disorder."

This new work was reported online in the Oct. 21 issue of the *Journal of Neuroscience*. The work was funded by the National Center for Complementary and Alternative Medicine of NIH, the Fetzer Institute and the Impact Foundation, and by gifts from the John W. Kluge Foundation, Bryant Wangard, Ralph Robinson and Keith and Arlene Bronstein.

Provided by University of Wisconsin-Madison ([news](#) : [web](#))

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