

Preventing addiction with insight from scruffy dogs and ancient meditation

April 9 2019, by Jennifer Nozawa



Credit: University of Utah

When Ivan Pavlov was measuring dog slobber at the turn of the 20th century, he could not have imagined all the ways his classical conditioning research would shape the future of scientific discovery.

Today, there is substantial research suggesting that conditioned behaviors—such as smoking after a meal—sustain unhealthy habits. It follows that by preventing the development of certain conditioned behaviors, individuals might also be able to prevent developing unhealthy habits, such as addiction.

Researchers at the University of Utah College of Social Work have begun testing this possibility.

A new study, to be published in the upcoming May volume of the journal *Physiology & Behavior*, shows that [mindfulness training](#)—a practice rooted in ancient meditative traditions—disrupts the development of conditioned behaviors. Based on the results, the study's authors suggest that mindfulness training may protect individuals from developing the conditioned behaviors that sustain unhealthy habits.

"We all have automatic habits that develop over time," said Adam Hanley, lead author of the study and a research assistant professor at the U's Center on Mindfulness and Integrative Health Intervention Development. "Through mindfulness training, we're trying to develop conscious control over automatic habits."

The researchers divided [study participants](#) into two groups: they trained one [group](#) to meditate; the other group listened to excerpts of a book read aloud. Both groups then completed a conditioning procedure that paired an audible beep with a puff of air in one eye, causing them to blink. The researchers designed the procedure to teach participants that a beep meant an air puff was coming, so they should blink whenever they heard the beep.

Just as Pavlov's dogs drooled at the sound of a bell, Hanley's book group blinked at the sound of the beep. The meditation group, however, was slower to develop the conditioned response (blinking) and blinked less

often than the book group.

The results indicate mindfulness training can delay the development of Pavlovian conditioning and, once the [behavior](#) has developed, decrease the frequency with which it occurs. This is the first study to show that mindfulness meditation training can disrupt the development of classically conditioned behaviors.

With conditioned behaviors sustaining [unhealthy habits](#) such as smoking or opioid misuse, the implications of this research are far-reaching and potentially lifesaving, Hanley said.

"Imagine having a way to inoculate people against addiction, one of our biggest public health crises," said Hanley. "Mindfulness training has that potential."

More information: Adam W. Hanley et al. Mindfulness training disrupts Pavlovian conditioning, *Physiology & Behavior* (2019). [DOI: 10.1016/j.physbeh.2019.02.028](#)

Provided by University of Utah

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