

“We're going to [discuss] how this is applicable as a general tool for the development of targeted mental health treatments,” Santoyo said. “We can explore how certain experiences line up with certain patterns of brain activity. We know certain patterns of brain activity are associated with certain psychiatric disorders.”

Structuring the spiritual

At the conference, the team will frame these broad implications with what might seem like a small distinction: whether meditators focus on their sensations of breathing in their nose or in their belly. The two meditation techniques hail from different East Asian traditions. Carefully coded experience data gathered by Santoyo, Kerr, and Harold Roth, professor of religious studies at Brown, show that the two techniques produced significantly different mental states in student meditators.

“We found that when students focused on the breath in the belly their descriptions of experience focused on attention to specific somatic areas and body sensations,” the researchers wrote in their conference abstract. “When students described practice experiences related to a focus on the nose during meditation, they tended to describe a quality of mind, specifically how their attention ‘felt’ when they sensed it.”

The ability to distill a rigorous distinction between the experiences came not only from randomly assigning meditating students to two groups – one focused on the nose and one focused on the belly – but also by employing two independent coders to perform standardized analyses of the journal entries the students made immediately after meditating.

This kind of structured coding of self-reported personal experience is called “grounded theory methodology.” Santoyo's application of it to meditation allows for the formation of hypotheses.

For example, Kerr said, “Based on the predominantly somatic descriptions of mindfulness experience offered by the belly-focused group, we would expect there to be more ongoing, resting-state functional connectivity in this group across different parts of a large brain region called the insula that encodes visceral, somatic sensations and also provides a readout of the emotional aspects of so-called ‘gut feelings.’”