ABSTRACT
(250 WORD LIMIT)

Mindfulness has come to occupy a significant space within contemporary science, medicine, and popular culture. Although public enthusiasm for mindfulness has been largely influenced by a growing body of scientific research documenting its various psychological benefits, very little is known regarding exactly how mindfulness confers its salutary effects. In particular, the leading mechanistic claim—that mindfulness practice enhances cognitive and affective functioning by changing the brain—has not been thoroughly examined from the perspective of basic cognitive neuroscience despite the clear need for such work. The current proposal seeks to fill this important gap by testing the key hypothesis that distinct brain changes occurring over time in response to repeated training of focused attention (FA) and open monitoring (OM), two separate forms of mindfulness practice that are widely adopted, will produce distinguishable effects on key dimensions of cognitive control and emotion regulation. This hypothesis will be investigated by implementing an innovative fully within-subject longitudinal EEG experimental design (N = 30), involving time-intensive sampling of mindfulness-related neural activity (24 EEG recorded practice sessions) and an optimized assessment protocol tailored specifically to measure the development and effect of distinct mindfulness skills on cognitive control and emotion regulatory abilities. A cutting-edge multivariate neural pattern classifier will be applied to the rich dataset to fully characterize the unique neural signatures associated with FA and OM training. Together, the unprecedented rate of repeated sampling and mechanistic rigor of the experimental assessment protocol will enable a thorough mapping of how mindfulness-induced neuroplasticity modulates core psychological functions.