

**Pace, T. W. W., Negi, L. T., Adame, D. D., Cole, S. P., Sivilli, T. I., Brown, T. D., Issa, M. J., & Raison, C.L. (2009). Effect of compassion meditation on neuroendocrine, innate immune and behavioral responses to psychosocial stress. *Psychoneuroendocrinology*, 34, 87-98.**

Summary by Melissa Rosenkranz, Ph.D.; Postdoc

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In the stressful, fast-paced world of today, many people are turning to practices like meditation for relief and protection from the ills associated with this lifestyle. In a recent article, Pace and colleagues (2009) addressed the effectiveness of one such practice, compassion meditation, in mitigating the immune and endocrine effects of psychological stress.

In their investigation, healthy undergraduate students ( $n = 89$ ) at Emory University that were enrolled in an introductory health education course were recruited and randomly assigned to receive training in compassion meditation ( $n = 45$ ) or to participate in a health discussion group ( $n = 44$ ). Participants were not informed of their group assignment until completion of baseline data collection. Those assigned to the health discussion group were informed that it was a comparison group for the meditation intervention and were given the option of taking part in the compassion training the following semester.

Compassion meditation training was designed and delivered by Lobsang Tenzin Negi and was based largely on Tibetan Buddhist mind-training practices. To quote the authors, these practices “utilize a cognitive, analytic approach to challenge one’s unexamined thoughts and emotions toward other people, with the long-term goal of developing altruistic emotions and behavior towards all people”. Training in these practices took place twice per week over 6 weeks, where the first 2 weeks focused on building attention and awareness and the subsequent 4 weeks focused more heavily on generating empathy and love for a growing circle of people. At home practiced involved a combination of these practices.

The health discussion group content was designed by Daniel Adame (an expert in health education) and Timothy Brown (medical student) and was delivered by graduate students. The topics of discussion such as stress management, substance abuse, depression and anxiety, body image and eating disorders, contraception, and sexually transmitted infections, were chosen to be of interest and concern to college undergraduates. The discussions were held either once per week over 12 weeks or twice per week over 6 weeks. Participants in this group were also assigned at-home work, which included self-improvement papers related to the discussion topic of the week.

In order to assess the impact of training on stress-induced immune and endocrine parameters, psychological stress was evoked using the Trier Social Stress Test (TSST). The TSST consists of a public speaking and a mental arithmetic challenge. Stress reactivity was measured using plasma cortisol and IL-6, a proinflammatory cytokine, was used as an

indicator of inflammatory immune activation. In addition, the Profile of Mood States (POMS) was used to assess subjective distress.

In response to the stress, cortisol, IL-6 levels, and subjective distress all increased significantly. However, when group differences were considered, there were no differences between those who received meditation training and those who participated in the health discussion group. To explore their data further, Pace and colleagues divided the meditation group into those who practiced a lot and those who practiced little, based on a median split. Here, they found that those who practiced a lot had significantly lower pre-stress subjective distress and post-stress IL-6 levels, compared to those who practiced little. Neither practice group differed from the control group in IL-6, whose levels were between those low and high in meditation practice, though subjective distress was reduced in those high in meditation practice, compared to both groups.

Though limited by a lack of a group effect, the authors suggest that compassion training may have intriguing implications for health and these data warrant future study in this domain. They also suggest that these data bolster previous claims about the importance of practice in meditation training and argue that compassion practice, in particular may be sensitive to variations in practice, given its progressive nature.