

# The effects of brief mindfulness meditation training on experimentally induced pain.

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## Abstract

This study investigated the effects of brief mindfulness meditation training on ratings of painful electrical stimulation. In Experiment 1, we used a 3-day (20 min/d) mindfulness meditation intervention and measured pain ratings before and after the intervention. Participants' numerical ratings of pain to "low" and "high" electrical stimulation significantly decreased after meditation training. Pain sensitivity, measured by change in stimulus intensity thresholds, also decreased after training. We investigated, in Experiment 2, how well relaxation and a math distraction task attenuated experimental pain. Math distraction but not relaxation reduced high pain ratings. There was no reduction in pain sensitivity in these participants. In Experiment 3, we directly compared the effects of meditation with math distraction and relaxation conditions. Our findings indicated significant effects of both meditation and math distraction. Consistent with what was observed in Experiment 1, these participants also demonstrated a decrease in pain sensitivity after meditation training. Changes in the mindfulness and anxiety assessments suggest that meditation's analgesic effects are related to reduced anxiety and the enhanced ability to focus on the present moment.

## PERSPECTIVE:

Our findings indicate that a brief 3-day mindfulness meditation intervention was effective at reducing pain ratings and anxiety scores when compared with baseline testing and other cognitive manipulations. The brief meditation training was also effective at increasing mindfulness skills.

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PMID:

19853530

[PubMed - indexed for MEDLINE]