**Contents**

62 New Cites p1
27 Interventions
18 Associations
6 Methods
11 Reviews
0 Trials

**Highlights** p5

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**Interventions**

*Articles testing the applied science and implementation of mindfulness-based interventions*

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Bruggeman-Everts, F. Z., Wolvers, M. D., van de Schoot, R.,...Van der Lee, M. L. (2017). **Effectiveness of two web-based interventions for chronic cancer-related fatigue compared to an active control condition: Results of the "fitter na kanker" RCT.** *Journal of Medical Internet Research.* [link]


practice in MBCT for perinatal women.  
*Mindfulness.* [link]


**ASSOCIATIONS**

Articles examining the correlates and mechanisms of mindfulness


**METHODS**

*Articles developing empirical procedures to advance the measurement and methodology of mindfulness*


romantic relationships: Initial development and validation of the relationship mindfulness measure. *Journal of Marital Family Therapy.* [link]


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**REVIEWS**

*Articles reviewing content areas of mindfulness or conducting meta-analyses of published research*


Luberto, C. M., Shinday, N., Song, R.,...Yeh, G. Y. (2017). A systematic review and meta-

analysis of the effects of meditation on empathy, compassion, and prosocial behaviors. *Mindfulness.* [link]


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**TRIALS**

Research studies newly funded by the National Institutes of Health (OCT 2017)

None reported.
Youth living with HIV have to cope not only with the psychological stress of having a chronic disease, but also with the challenges of taking medications regularly and following through with scheduled medical appointments. Successful coping may be particularly difficult for HIV-infected adolescents and young adults who are still developing their self-regulation skills and working through developmental issues regarding identity formation.

Webb et al. [AIDS Care] conducted a randomized, controlled study of Mindfulness-Based Stress Reduction (MBSR) to see if it could enhance psychological wellbeing, self-regulation, and disease management in youth with HIV.

The researchers randomly assigned 72 youth with HIV (age range = 14-22 years; 53% male) to either MBSR or a health education course. The MBSR intervention adapted its vocabulary (but not its content or structure) to better suit the needs of urban youth. The health education course was structured to match MBSR in terms of the number and length of its sessions, as well as its group structure and size. The course was designed to cover topics such as nutrition, exercise and puberty.

Participants completed self-report measures of mindfulness (the Mindful Attention and Awareness Scale), perceived stress, coping styles, aggression, quality of life, and medication adherence at baseline, post-intervention, and 3-month follow-up. They also completed Stroop-like tasks to assess their ability to regulate attention in the presence of interfering emotionally positive, negative, or neutral stimuli.

HIV viral loads (measures of the severity of HIV infection) and CD4 counts (measures of immune system functioning) were obtained from participants’ medical records. Participants were categorized as having either low viral loads (under 100 viral copies per mL) or higher viral loads (over 100 viral copies per mL). Low HIV viral loads and higher CD4 counts are markers of more successful disease management. They indicate that an HIV-infected person isn’t progressing towards more advanced stages of the disease and is less likely to spread the infection through bodily fluids.

Of the total sample, 72% of the participants completed their interventions and 55% were available for 3-month follow-up. Attrition rates did not differ between groups. At 3-month follow-up, MBSR participants were significantly more likely to report higher levels of mindfulness, higher levels of problem solving as a coping strategy, and higher levels of life satisfaction. Additionally, these participants were significantly less likely to report being aggressive. MBSR participants also gave significantly more correct Stroop responses when confronted with interference from words with a negative emotional valence at post-intervention. There were no significant between-group differences in perceived stress, tendencies toward rumination and distraction, illness-related anxiety, disease burden, self-reported medication of missed medication doses, or CD4 counts.

MBSR participants were significantly more likely to change their HIV viral loads over the course of the study from high to low (44%) than from low to high (14%). Control group participants, on the other hand, were equally likely to switch viral load categorizations from high to low (27%) and low to high (27%).

The results suggest that MBSR may help reduce high viral loads and maintain low viral loads in HIV-infected youth. This is important because lower viral loads prevent disease progression and lower the risk of transmission. The results also support a role for MBSR in enhancing problem solving, life-satisfaction, and emotional regulation in youth with HIV-infection.

The study is limited by its relatively small sample size and relatively high attrition rate. None of the variables that were significant at 3-month follow up were also significant at immediate post-intervention testing and vice versa, raising concerns about the robustness of the findings.
Are there biological markers for depression that continue to exist even when the depressive symptoms go away? One possible candidate for such a marker is an electroencephalographic (EEG) waveform called error related negativity (ERN). ERN is a sharp negative wave that occurs whenever people make a mistake while performing a task. The waveform begins at the start of the error and peaks shortly thereafter. ERNs occur even when people are not consciously aware of having made a mistake.

In healthy individuals, larger ERNs are associated with better executive and attentional control and enhanced self-regulation. People with depression, however, typically have smaller ERNs. When their depressive symptoms improve with treatment, their ERNs continue to be smaller than those of healthy individuals. This raises the possibility that smaller ERNs reflect an underlying biological vulnerability to depression.

Fissler et al. [Cognitive and Affective Behavioral Neuroscience] sought to discover whether brief mindfulness training could help improve ERNs in people with chronic depression.

The researchers recruited a sample of 68 patients (average age = 39 years; 61% female) with histories of chronic or recurring major depression who were currently depressed. They also recruited a comparison sample of 25 healthy controls. Participants had their EEGs recorded while performing a sustained attention task. A series of digits were displayed individually on a computer screen and participants were told to push the keyboard space bar whenever they saw the digits “0” through “2” and “4” through “9,” but to withhold responding whenever they saw a “3.” The researchers then recorded the total number of errors made to the number “3” and the average ERN magnitude when those errors were made.

Following the initial assessment, members of the depressed sample were randomly assigned to either two weeks of mindfulness training or resting control training. Both trainings were delivered in a series of three 1.5-hour individual sessions accompanied by daily home practice. The mindfulness training required 25 minutes of formal guided home meditation practice twice a day. The meditative practices followed the sequence typically used in Mindfulness-Based Cognitive Therapy. Control group participants engaged in two 25-minute rest periods a day. They were told that the rest would reduce stress and help them to disengage from their negative thinking. Mindfulness participants believed their intervention to be significantly more plausible than control group participants (η² = .23) Both groups of participants with depression repeated the EEG-monitored sustained attention task following their respective interventions.

The researchers analyzed data for 59 depressed participants and 18 healthy controls who made multiple mistakes on the sustained attention task. Depressed patients made significantly (η² = .12) more mistakes (mean = 26) than healthy controls (mean = 16). Depressed patients also had significantly smaller baseline ERNs than healthy controls. The magnitude of depressed patients’ ERNs were uncorrelated with the severity of their psychiatric symptoms.

Participants with depression in the mindfulness group showed both greater psychiatric symptom improvement (η² = .23) and greater ERN improvement in their frontal brain regions than did participants with depression in the control group (η² = .08). ERN improvement was uncorrelated with improvements in psychiatric symptoms.

The results show that a brief mindfulness intervention can improve ERN in people with depression. This is important because a larger ERN is associated with better cognitive control and self-regulation, whereas a smaller ERN may indicate a vulnerability to depression. It’s possible that enhancing ERN may lower the risk of future depressive recurrence. The fact that participants found the mindfulness group more credible than the control group raises the possibility of different group motivation levels.