Mindfulness Research Monthly
Providing monthly research updates on mindfulness
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Interventions

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

Baranski, M. F., Was, C. A. (2018). **A more rigorous examination of the effects of mindfulness meditation on working memory capacity**. *Journal of Cognitive Enhancement.* [link]

Bartel, K., Huang, C., Maddock, B.,...Gradisar, M. (2018). **Brief school-based interventions to assist adolescents' sleep-onset latency: Comparing mindfulness and constructive worry versus controls**. *J Sleep Research.* [link]

Bennett, R. I., Egan, H., Cook, A., Mantzios, M. (2018). **Mindfulness as an intervention for recalling information from a lecture as a measure of academic performance in higher education: A randomized experiment**. *Higher Education for the Future.* [link]

Brito-Pons, G., Campos, D., Cebolla, A. (2018). **Implicit or explicit compassion? Effects of compassion cultivation training and comparison with MBSR**. *Mindfulness.* [link]

Ergas, O., Hadar, L. L., Albelda, N., Levit-Binnun, N. (2018). **Contemplative neuroscience as a gateway to mindfulness: Findings from an educationally framed teacher learning program**. *Mindfulness.* [link]

Fahmy, R., Wasfi, M., Mamdouh, R.,...Sambataro, F. (2018). **MBIs modulate structural network strength in patients with opioid dependence**. *Addictive Behaviors.* [link]

Farver-Vestergaard, I., O'Toole, M. S., O'Connor, M.,...Zachariae, R. (2018). **MBCT in COPD: A cluster RCT**. *European Respiratory Journal.* [link]

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Gilmartin, H., Saint, S., Rogers, M.,...Chopra, V. (2018). **Pilot RCT to improve hand hygiene through mindful moments**. *BMJ Qual Saf.* [link]

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Kersemaekers, W., Rupprecht, S., Wittmann, M.,...Kohls, N. (2018). **A workplace mindfulness intervention may be associated with improved psychological well-being and productivity. A preliminary field study in a company setting**. *Frontiers in Psychology.* [link]

Klassen-Bolding, S. (2018). **A qualitative investigation of preteen girls' experiences in a mindfulness-based eating disorder prevention program**. *Counseling Outcome Research Eval.* [link]

Laraia, B. A., Adler, N. E., Coleman-Phox, K.,...Epel, E. (2018). **Novel interventions to reduce stress and overeating in overweight pregnant women: A feasibility study**. *Maternal and Child Health Journal.* [link]

Lymeus, F., Lindberg, P., Hartig, T. (2018). **Building mindfulness bottom-up: Meditation in natural settings supports open monitoring and attention restoration**. *Consciousness and Cognition.* [link]

Lynch, S., Gander, M. L., Nahar, A.,...Walach, H. (2018). **Mindfulness-based coping with university life: A randomized wait-list controlled study**. *SAGE Open.* [link]

Ong, J. C., Xia, Y., Smith-Mason, C. E., Manber, R. (2018). **A RCT of mindfulness meditation for chronic insomnia: Effects on daytime symptoms and cognitive-emotional arousal**. *Mindfulness.* [link]

Pearson, S., Wills, K., Woods, M., Warnecke, E. (2018). **Effects of mindfulness on psychological**

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Singh, N. N., Lancioni, G. E., Medvedev, O. N.,...Kim, E. (2018). **Comparative effectiveness of caregiver training in mindfulness-based positive behavior support (MBPBS) and positive behavior support (PBS) in a RCT**. *Mindfulness.* [link]

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Zelazo, P. D., Carlson, S. M., Masten, A. S., Forston, J. (2018). **Mindfulness plus reflection training: Effects on executive function in early childhood**. *Frontiers in Psychology*. [link]

Associations

Articles examining the correlates and mechanisms of mindfulness

Aalders, J., Hartman, E., Nefs, G.,...Pouwer, F. (2018). **Mindfulness and fear of hypoglycaemia in parents of children with type 1 diabetes: Results from diabetes MILES youth – the Netherlands**. *Diabetic Medicine.* [link]

Agnoli, S., Vanucci, M., Pelagatti, C., Corazza, G. E. (2018). **Exploring the link between mind wandering, mindfulness, and creativity: A multidimensional approach**. *Creativity Research Journal.* [link]

Annameier, S. K., Kelly, N. R., Courville, A. B.,...Shomaker, L. B. (2018). **Mindfulness and laboratory eating behavior in adolescent girls at risk for type 2 diabetes**. *Appetite.* [link]

Beshai, S., Parmar, P. (2018). **Trait mindfulness may buffer against the deleterious effects of childhood abuse in recurrent depression: A retrospective exploratory study**. *Clinical Psychologist.* [link]

Chan, K. K., Lee, C. W., Mak, W. W. (2018). **Mindfulness model of stigma resistance among individuals with psychiatric disorders**. *Mindfulness.* [link]

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Manigault, A. W., Woody, A., Zoccola, P. M., Dickerson, S. S. (2018). **Trait mindfulness predicts the presence but not the magnitude of cortisol responses to acute stress**. *Psychoneuroendocrinology*. [link]

Martin, C. E., Bartlett, B. A., Reddy, M. K.,...Vujanovic, A. A. (2018). **Associations between mindfulness facets and PTSD symptom severity in psychiatric inpatients**. *Mindfulness.* [link]

Moreira, H., Gouveia, M. J., Canavarro, M. C. (2018). **Is mindful parenting associated with adolescents' well-being in early and middle/late adolescence?**. *Journal of Youth and Adolescence.* [link]

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Xu, W., Ding, X., Goh, P. H., An, Y. (2018). **Dispositional mindfulness moderates the relationship between depression and posttraumatic growth in Chinese adolescents following a tornado**. *Personality and Individual Differences*. [link]

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Methods

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

Lo, H. H., Yeung, J. W., Duncan, L. G.,...Ng, S. M. (2018). **Validating of the interpersonal mindfulness in parenting scale in Hong Kong Chinese**. *Mindfulness.* [link]

Medvedev, O. N., Bergomi, C., Röthlin, P., Krägeloh, C. U. (2018). **Assessing the psychometric properties of the comprehensive inventory of mindfulness experiences (CHIME) using rasch analysis**. *European Journal Psychological Assessment.* [link]

Sinatra, E., Black, D. S. (2018). **MBIs for cancer survivors: What do we know about the assessment of quality of life outcomes?** *Expert Review Quality of Life Cancer Care.* [link]

Westenberg, R. F., Zale, E. L., Heinhuis, T. J.,...Vranceanu, A. M. (2018). **Does a brief mindfulness exercise improve outcomes in upper extremity patients? A RCT**. *Clinical Orthopaedics and Related Research.* [link]

Reviews

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

Dunn, C., Haubenreiser, M., Johnson, M.,...Thomas, C. (2018). **Mindfulness approaches and weight loss, weight maintenance, and weight regain**. *Current Obesity Reports.* [link]

Falcone, G., Jerram, M. (2018). **Brain activity in mindfulness depends on experience: A meta-analysis of fMRI studies**. *Mindfulness.* [link]

Hedman-Lagerlöf, M., Hedman-Lagerlöf, E., Öst, L. -G. (2018). **The empirical support for MBIs for common psychiatric disorders: A systematic review and meta-analysis**. *Psychol Med.* [link]

Horesh, D., Gordon, I. (2018). **Mindfulness-based therapy for traumatized adolescents: An under-utilized, under-studied intervention**. *Journal of Loss and Trauma.* [link]

Martin, M. (2018). **Mindfulness and transformation in a college classroom**. *Adult Learning.* [link]

Newton, T. L., Ohrt, J. H. (2018). **Infusing MBIs in support groups for grieving college students**. *Journal for Specialists in Group Work.* [link]

Potes, A., Souza, G., Nikolitch, K.,...Rej, S. (2018). **Mindfulness in severe and persistent mental illness: A systematic review**. *International Journal of Psychiatry in Clinical Practice.* [link]

Russell-Williams, J., Jaroudi, W., Perich, T.,...Moustafa, A. A. (2018). **Mindfulness and meditation: Treating cognitive impairment and reducing stress in dementia**. *Rev in Neuro.* [link]

Santiago, P. H., Colussi, C. F. (2018). **Feasibility evaluation of a MBI for primary care professionals: Proposal of an evaluative model**. *Complementary Therapies in Clinical Practice.* [link]

Shaw, J., Sekelja, N., Frasca, D.,...Price, M. A. (2018). **Being mindful of MBIs in cancer: A systematic review of intervention reporting and study methodology**. *Psycho-oncology.* [link]

Simpson, S., Mercer, S., Simpson, R.,...Wyke, S. (2018). **MBIs for young offenders: A scoping review**. *Mindfulness.* [link]

Wong, S. Y., Chan, J. Y., Zhang, D.,...Tsoi, K. K. (2018). **The safety of MBIs: A systematic review of RCTs**. *Mindfulness.* [link]

Trials

Research studies newly funded by the National Institutes of Health (FEB 2018)

Michigan Technological University (J. Durocher, PI). **Mindfulness and neural cardiovascular control in humans**. NIH/NHLBI project #1R15AT009789-01. [link]

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Highlights

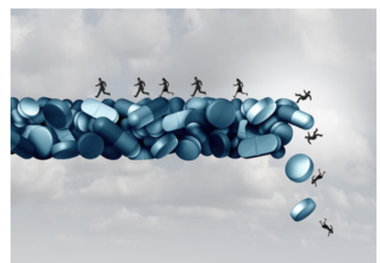
A summary of select studies from the issue, providing a snapshot of some of the latest research

The United States is in the midst of an opioid epidemic, with over 42,000 opioid overdose related deaths in 2016. There is a clear need for innovative approaches to help deal with the problems of substance dependency and misuse. Mindfulness-based interventions are sometimes used as adjunctive treatments for substance use disorders, but little is known about how these interventions affect the brains of substance users. **Fahmy et al. [*Addictive Behaviors*]** used structural magnetic resonance imaging (MRI) to investigate brain changes in opiate dependent patients undergoing either treatment-as-usual (TAU), or treatment-as-usual plus Mindfulness-Based Stress Reduction (MBSR).

MRI data were analyzed to identify structural changes in the cellular networks connecting brain regions. The researchers limited their investigation to regions previously shown to be of interest in addiction and mindfulness research. They also looked at whether structural brain network changes were accompanied by meaningful changes in personality traits relevant to recovery and relapse. The study followed 28 opiate dependent patients (average age = 30 years; 89% male) in a four-week inpatient substance treatment program in Cairo, Egypt. Half the participants were assigned to treatment as usual (TAU) and half to MBSR. Assignment was based on order of enrollment in the study and was not strictly random.

Nineteen participants completed their treatments and post-treatment evaluations. There was no difference in treatment dropout rates. TAU included medication and group cognitive behavioral therapy. The MBSR program was a culturally adopted Arabic-language version of MBSR. Participants completed the Freiburg Mindfulness Inventory (FMI), self-reported measures of distress tolerance, sensation seeking, impulsivity, and addiction severity, and underwent MRI scanning before and after treatment.

MBSR participants showed significant strengthening in the brain networks connecting the prefrontal cortex with the anterior cingulate cortex (prefrontal-cingulate network) and the bilateral insular region with the bilateral striatal region (striatal-insular network). These structural changes did not occur in the TAU group. Additionally, the greater the degree of prefrontal-cingulate network strengthening, the greater the decrease in the use of impulsive behavior as a strategy to decrease unpleasant emotional states (r=.74; a large effect).



Self-reported mindfulness scores on the FRI improved significantly over time for both groups (average TAU increase = 5 points; average MBSR increase = 8 points), as did measures of distress tolerance. MBSR participants' tendency to resort to impulsive behavior to distract from unpleasant emotions declined significantly over time, whereas a similar trend within the TAU group did not reach significance. The difference in impulsivity change rates between groups was not significant.

The study demonstrates that four weeks of MBSR can strengthen brain networks associated with executive control and interoceptive awareness in patients with opiate dependence. There was a strong association between strengthening the prefrontal-cingulate network and decreasing impulsivity. This makes intuitive sense given that the prefrontal cortex and cingulate cortex are associated with controlling attention, reducing distraction and inhibiting impulsive responding. These are all important functions in resisting temptation and preventing relapse. The finding that MBSR also strengthens the striatal-insular network is important because decreased striatal and insular volumes have been previously noted in patients with alcohol dependence. The study is limited by its lack of randomization, small sample size, and lack of statistical correction for multiple comparisons.

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Chronic Obstructive Respiratory Disease (COPD) is an incurable progressive inflammatory lung disease that restricts airway flow and causes shortness of breath, wheezing, excessive mucus production, and coughing. The disease afflicts 16 million Americans and 65 million people worldwide. Treatment commonly includes smoking cessation, exercise, bronchodilator inhalers, anti-inflammatory medications, and supplementary oxygen. About one third of COPD patients report symptoms of anxiety and/or depression that are linked to poorer health and quality of life outcomes.

Farver-Vestergaard et al. [*European Respiratory Journal*] investigated whether Mindfulness-Based Cognitive Therapy (MBCT) could provide additional psychological, health, and quality of life benefits when provided in conjunction with standard pulmonary rehabilitation (PR).

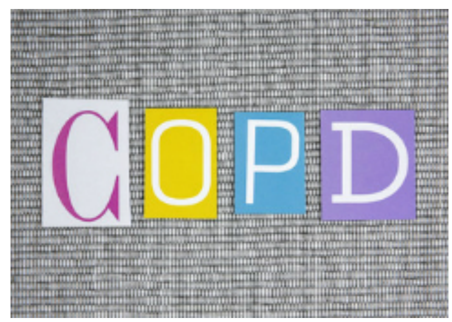
The researchers randomly assigned 84 Danish COPD patients (average age = 67 years; 57% female) to PR alone or PR plus MBCT. PR was delivered in 2 weekly sessions over an 8-week period and consisted of exercise in combination with disease and lifestyle education. The add-on MBCT program consisted of 8 weekly 105-minute group sessions. MBCT meditations were modified to focus on the sensations of heartbeat, blood flow, and contact of the feet with the floor rather than on the breath. Meditations were shortened, cognitive exercises simplified, and the full-day retreat eliminated.

Participants were assessed on anxiety, depression, COPD health status impairment, mindfulness (the Five Facet Mindfulness Questionnaire), self-compassion, COPD self-efficacy, and breathlessness-related catastrophizing at five time points: before treatment, mid-treatment, after treatment, and at 3- and 6-month follow-up.

Pre- and post-treatment measures were taken of activity level (using an accelerometer, a Fitbit-like device for measuring movement), and pre- and post-treatment blood samples were drawn to measure blood inflammatory factors including tumor necrosis factor alpha (TNF-α), and a variety of interleukins (IL-6, IL-8, and IL17E).

The results show that depression scores declined significantly for the MBCT group, but not for the PR group (Cohen's d=0.51). This improvement in depressive symptoms was sustained at 3-month and 6-month follow-up. Anxiety scores were unaffected in both groups. There was a trend toward improved COPD health status for MBCT participants, but not the PR participants (Cohen's d=0.42, p=.06).

TNF-α levels increased significantly for the PR group, but not for the MBCT group. There were no significant effects on interleukins or activity level. An examination of moderating and meditating variables showed that younger COPD patients benefited significantly more from MBCT (Cohens' d=0.38), and that improvements in self-compassion temporally preceded improvements in depressive symptoms.



The study demonstrates that MBCT can significantly decrease depressive symptoms in COPD patients beyond that of conventional pulmonary rehabilitation. MBCT's marginally positive effect on COPD illness impairment status and the lack of TNF-α increase for MBCT participants points to potential health benefits. The finding in regard to TNF-α is important since TNF-α plays a pro-inflammatory role in COPD.

The study's low initial enrollment rate and fairly large attrition rate (at 6-month follow-up, 36% of the MBCT group and 27% of PR group failed to complete assessments) led to a smaller sample size than intended, reducing the study's power to detect potentially significant differences. The study is also limited by the absence of a placebo or active psychosocial control, and its reliance on blood rather than bronchoaveolar lavage samples to detect interleukin levels.