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Editor-in-Chief

David S. Black, PhD, MPH

Highlights by

Seth Segall, PhD

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INTERVENTIONS

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

Ashton, N. J., Hye, A., Leckey, C. A.,...Marchant, N. L. (2017). **Plasma REST: A novel candidate biomarker of Alzheimer's disease is modified by psychological intervention in an at-risk population.** *Translational Psychiatry*. [link]

Burke, M. M., Chan, N., Neece, C. L. (2017). **Parent perspectives of applying MBSR strategies to special education.** *Intellectual and Developmental Disabilities*. [link]

Cahn, B. R., Goodman, M. S., Peterson, C. T.,...Mills, P. J. (2017). **Yoga, meditation and mind-body health: Increased BDNF, cortisol awakening response, and altered inflammatory marker expression after a 3-month yoga and meditation retreat.** *Frontiers in Human Neuroscience*. [link]

Chenneville, T., Machacek, M., Little, T.,...De Nadai, A. (2017). **Effects of a mindful rational living intervention on the experience of destructive emotions.** *Journal of Cognitive Psychotherapy*. [link]

Felver, J. C., Felver, S. L., Margolis, K. L.,...Horner, R. H. (2017). **Effectiveness and social validity of the soles of the feet mindfulness-based intervention with special education students.** *Contemporary School Psychology*. [link]

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Jha, A. P., Witkin, J. E., Morrison, A. B.,...Stanley, E. (2017). **Short-form mindfulness training protects against working memory degradation over high-demand intervals.** *Journal of Cognitive Enhancement*. [link]

Lammer, H. A. (2017). **The creation of a successful mindfulness-based perinatal program.** *Journal of Obstetric, Gynecologic & Neonatal Nursing*. [link]

Lilliecreutz, E. K., Felixson, B., Lundqvist, A., Samuelsson, K. (2017). **Effects of guided aerobic exercise and mindfulness after acquired brain injury: A pilot study.** *European Journal of Physiotherapy*. [link]

Marshall, R. S., Laures-Gore, J., Love, K. (2017). **Brief mindfulness meditation group training in aphasia: Exploring attention, language and psychophysiological outcomes.** *International Journal of Language & Communication Disorders*. [link]

Miller, C. J., Brooker, B. (2017). **Mindfulness programming for parents and teachers of children with ADHD.** *Complementary Therapies in Clinical Practice*. [link]

Montero-Marin, J., Gaete, J., Araya, R.,...García-Campayo, J. (2017). **Impact of a blended web-based mindfulness programme for general practitioners: A pilot study.** *Mindfulness*. [link]

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feasibility study. *European Journal of Cardiovascular Nursing.* [\[link\]](#)

Paz, R., Zvielli, A., Goldstein, P., Bernstein, A. (2017). **Brief mindfulness training de-couples the anxiogenic effects of distress intolerance on reactivity to and recovery from stress among deprived smokers.** *Behaviour Research and Therapy.* [\[link\]](#)

Reid, N., Dawe, S., Harnett, P.,...O'Callaghan, F. (2017). **Feasibility study of a family-focused intervention to improve outcomes for children with FASD.** *Research in Developmental Disabilities.* [\[link\]](#)

Ruijgrok-Lupton, P. E., Crane, R. S., Dorjee, D. (2017). **Impact of mindfulness-based teacher training on MBSR participant well-being outcomes and course satisfaction.** *Mindfulness.* [\[link\]](#)

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Wong, S. Y., Zhang, D. X., Li, C. C.,...Wing, Y. K. (2017). **Comparing the effects of MBCT and sleep psycho-education with exercise on chronic insomnia: A randomised controlled trial.** *Psychotherapy and Psychosomatics.* [\[link\]](#)

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Articles examining the correlates and mechanisms of mindfulness

Baranski, M., Was, C. A. (2017). **Mindfulness mediation may not increase false-memory and may instead protect from false-memory susceptibility.** *Mindfulness.* [\[link\]](#)

Borders, A., Lu, S. E. (2017). **The bidirectional associations between state anger and rumination and the role of trait mindfulness.** *Aggressive Behavior.* [\[link\]](#)

Brem, M. J., Shorey, R. C., Anderson, S., Stuart, G. L. (2017). **Dispositional mindfulness and compulsive sexual behavior among women in residential treatment for substance use disorders.** *Mindfulness.* [\[link\]](#)

Burke, A., Lam, C. N., Stussman, B., Yang, H. (2017). **Prevalence and patterns of use of mantra, mindfulness and spiritual meditation among adults in the united states.** *BMC Complementary and Alternative Medicine.* [\[link\]](#)

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Felsman, P., Verduyn, P., Ayduk, O., Kross, E. (2017). **Being present: Focusing on the present predicts improvements in life satisfaction but not happiness.** *Emotion.* [\[link\]](#)

Garland, E. L., Hanley, A. W., Baker, A. K., Howard, M. O. (2017). **Biobehavioral mechanisms of mindfulness as a treatment for chronic stress: An rdoc perspective.** *Chronic Stress.* [\[link\]](#)

Hanley, A. W., Baker, A. K., Garland, E. L. (2017). **Self-interest may not be entirely in the interest of the self: Association between selflessness, dispositional mindfulness and psychological well-being.** *Personality and Individual Differences.* [\[link\]](#)

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Martin, K. P., Blair, S. M., Clark, G. I.,...Hunter, K. R. (2017). **Trait mindfulness moderates the relationship between early maladaptive schemas and depressive symptoms.** *Mindfulness.* [link]

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Nosratabadi, M., Halvaiepour, Z., Abootorabi, S. H. (2017). **Craving for cigarette smoking among male adolescents in Isfahan based on mindfulness and emotional self-regulation.** *International Journal of Adolescent Medicine and Health.* [link]

Pow, A. M., Cashwell, C. S. (2017). **Posttraumatic stress disorder and emotion-focused coping among disaster mental health counselors.** *Journal of Counseling & Development.* [link]

Stewart, K. L., Ahrens, A. H., Gunthert, K. C. (2017). **Relating to self and other: Mindfulness predicts compassionate and self-image relationship goals.** *Mindfulness.* [link]

Sweeny, K., Howell, J. L. (2017). **Bracing later and coping better: Benefits of mindfulness**

during a stressful waiting period. *Personality and Social Psychology Bulletin.* [link]

Weston, E., Raker, C., Huang, D., Mathews, C. A. (2017). **The association between mindfulness and post-operative pain in gynecologic oncology patients undergoing minimally invasive hysterectomy.** *Journal of Clinical Oncology.* [link]

Wilson, D., O'Connor, E. L. (2017). **Mindfulness, personality and disordered eating.** *Personality and Individual Differences.* [link]

METHODS

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

Aguirre, E., Stott, J., Charlesworth, G.,...Spector, A. (2017). **MBCT programme for depression in people with early stages of dementia: Study protocol for a randomised controlled feasibility study.** *Pilot and Feasibility Studies.* [link]

Cikajlo, I., Cizman Staba, U.,...Roddy, M. (2017). **A cloud-based virtual reality app for a novel telemindfulness service: Rationale, design and feasibility evaluation.** *JMIR Research Protocols.* [link]

Grabovac, A., Burrell, E. (2017). **Standardizing training in mindfulness-based interventions in Canadian psychiatry postgraduate programs: A competency-based framework.** *Academic Psychiatry.* [link]

Gu, J., Karl, A., Baer, R.,...Crane, C. (2017). **Latent profile analysis of the five facet mindfulness questionnaire in a sample with a history of recurrent depression.** *Assessment.* [link]

Laurie, K., Hyde, M. K., Lepore, S. J., Chambers, S. K. (2017). **Validation of the factor structure of the five facets of mindfulness questionnaire in men**

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Psycho-oncology. [\[link\]](#)

Sahdra, B. K., Ciarrochi, J., Parker, P. D.,...Baer, R. (2017). **Are people mindful in different ways?**

Disentangling the quantity and quality of mindfulness in latent profiles and exploring their links to mental health and life effectiveness. *European Journal of Personality.* [\[link\]](#)

van Emmerik, A. A., Berings, F., Lancee, J. (2017).

Efficacy of a mindfulness-based mobile application: A randomized waiting-list controlled trial. *Mindfulness.* [\[link\]](#)

Zhu, B., Hedman, A., Feng, S.,...Osika, W. (2017).

Designing, prototyping and evaluating digital mindfulness applications: A case study of mindful breathing for stress reduction. *Journal of Medical Internet Research.* [\[link\]](#)

REVIEWS

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

Brody, J. L., Scherer, D. G., Turner, C. W.,...Dalen, J.

(2017). **A conceptual model and clinical framework for integrating mindfulness into family therapy with adolescents.** *Family Process.* [\[link\]](#)

Dunne, J. (2017). **Mindfulness in anorexia nervosa: An integrated review of the literature.** *Journal of the American Psychiatric Nurses Association.* [\[link\]](#)

Hanley, A. W., Garland, E. L. (2017). **The mindful personality: A meta-analysis from a cybernetic perspective.** *Mindfulness.* [\[link\]](#)

Kor, P. P., Chien, W. T., Liu, J. Y., Lai, C. K. (2017). **Mindfulness-based intervention for stress reduction of family caregivers of people with**

dementia: A systematic review and meta-analysis. *Mindfulness.* [\[link\]](#)

Kurth, F., Cherbuin, N., Luders, E. (2017). **Aging mindfully to minimize cognitive decline.** *Journal of Cognitive Enhancement.* [\[link\]](#)

Sperduti, M., Makowski, D., Blondé, P., Piolino, P. (2017). **Meditation and successful aging: Can meditative practices counteract age-related cognitive decline?** *Geriatric Et Psychologie Neuropsychiatrie Du Vieillissement.* [\[link\]](#)

Stephenson, K. R., Kerth, J. (2017). **Effects of mindfulness-based therapies for female sexual dysfunction: A meta-analytic review.** *The Journal of Sex Research.* [\[link\]](#)

Wheeler, M. S., Arnkoff, D. B., Glass, C. R. (2017). **The neuroscience of mindfulness: How mindfulness alters the brain and facilitates emotion regulation.** *Mindfulness.* [\[link\]](#)

Xu, J. (2017). **A tripartite function of mindfulness in adjustment to aging: Acceptance, integration, and transcendence.** *The Gerontologist.* [\[link\]](#)

TRIALS

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

Johns Hopkins University (E. Sibinga, PI). **Improving treatment adherence in HIV-positive youth through mindfulness training.** NIH/NCCIH project # 5R01AT007888-05. [\[link\]](#)

Kent State University (D. Fresco, PI). **MBSR for high blood pressure: A two-site RCT.** NIH/NHLBI project #5R01HL119977-04. [\[link\]](#)

Medical University of Southern Carolina (F. Treiber, PI). **Smartphone delivered meditation for BP control among prehypertensives.** NIH/NHLBI project #5R01HL114957-05. [\[link\]](#)

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HIGHLIGHTS

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

Alzheimer's disease is a progressive brain disease affecting some five million older Americans. Given the profound personal, social, and economic costs of this disease, scientists are seeking ways to prevent its occurrence and progression. One avenue of investigation involves a protein called Repressor Element 1-Silencing Transcription Factor or REST. REST plays an important role in helping developing cells differentiate as neurons and protects aging brain cells from stress and toxicity. People with Alzheimer's have low REST levels, while older adults who retain their cognitive function well into their 90s and 100s have high REST levels. Also, older adults who show neurological changes typical of Alzheimer's do not progress to show behavioral signs of the disease if their REST levels remain high.

Can raising REST levels reduce the risk for Alzheimer's? **Ashton et al. [Translational Psychiatry]** explored this question using a new method for measuring REST in blood plasma. First they investigated whether this new REST measure in blood could discriminate between different levels of Alzheimer's risk. Second, they studied whether Mindfulness-Based Stress Reduction (MBSR) improved REST levels in a population at risk for potentially developing Alzheimer's.

The first study compared plasma REST levels in three groups of older (65 years or older) adults: 65 adults with Alzheimer's, 65 adults with mild cognitive impairment, and 65 healthy adults. There was a significant difference between the Alzheimer's group and both the healthy and mildly cognitively impaired groups. Mean REST levels were lowest for Alzheimer's patients (112 pg mL⁻¹) and highest for healthy controls (199 pg mL⁻¹), with mildly cognitive impaired patients measuring in between (194 pg mL⁻¹). Those mildly cognitive impaired who remained stable over time had higher REST levels (208 pg mL⁻¹) than those who eventually progressed to Alzheimer's diagnosis (180 pg mL⁻¹).

The group with Alzheimer's underwent magnetic resonance imaging (MRI) as well as testing for levels of 25 different plasma proteins known to be associated with cognitive decline and progression to Alzheimer's. Higher REST levels were significantly correlated with increased hippocampal ($r = .24$), entorhinal cortex ($r = .30$), and whole brain ($r = .21$) volume as well as with four of the plasma markers (BDNF, NSE, PAI-1, and RANTES) associated with cognitive decline. BDNF plays a neuroprotective role and RANTES is involved in the immune response, whereas NSE is associated with neuronal injury and PAI-1 with aging, anxiety, and depression.



The second study included 81 older adults (65 years or older) who were either depressed or anxious and who reported subjective symptoms of cognitive impairment and were thus considered to be at risk for Alzheimer's. They were randomly assigned to either an 8-week MBSR program, or an 8-week health education control group emphasizing factors such as healthy eating and medication management. All participants were assessed at baseline and after intervention for plasma REST levels, plasma markers associated with cognitive decline, measures of short-term and delayed memory and executive function, and measures of anxiety, depression, and worry.

MBSR and control participants had significantly different REST levels at baseline, but not after the intervention. This was due to a 39 pg mL⁻¹ REST increase in MBSR participants which was not matched by a similar rise in control participants. Increased REST levels in MBSR and controls were significantly correlated with decreased depression and anxiety, but not with changes in cognitive functions or worry. REST levels at baseline were significantly positively correlated with three of the plasma proteins associated with cognitive decline (BDNF, RANTES, and PAI-1), but none of these markers changed significantly from baseline to post-intervention.

Mindfulness Research Monthly

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JUL 2017

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The study shows that plasma REST levels are associated with Alzheimer's and mild cognitive impairment, and that REST levels can be increased through mindfulness training with concomitant improvements in depression and anxiety. Longer-term studies are needed to discover the degree to which MBSR-increased REST levels persist over time, and whether they can play a role in the prevention of Alzheimer's.

Waiting to learn the outcome of an important event can be quite stressful. People employ a variety of strategies to cope with waiting. These may include, "bracing for the worst" or trying to maintain a positive attitude, but the employed strategies are often ineffective and sometimes counterproductive. For example, "bracing for the worst" can help when deployed at the very end of a waiting period but make things worse if engaged right from the outset. In two related studies, **Sweeny et al. [*Personality & Social Psychology Bulletin*]** first explored how mindfulness disposition affects coping when people wait for their performance results. They then tested whether mindfulness meditation outperforms loving-kindness meditation in helping people cope with this stressful waiting period.

In the first study, 150 law school graduates (61% female; 61% Caucasian) completed questionnaires at five different times during the 4-month period of waiting for their bar exam results. The first questionnaire was completed three days after taking the bar exam, the last within a day of getting their results. The questionnaires assessed mindfulness disposition (using the Freiburg Mindfulness Inventory), "bracing for the worst," "hoping for the best," and self-rated coping and worry. The results showed that more mindful graduates used "bracing for the worst" significantly less, and reserved it only for the end of the waiting period when it was likely to be of actual benefit. More mindful graduates were also significantly more likely to maintain an optimistic mindset, worry less, and report better coping.

In the second study, 90 law school graduates (56% female; 61% Caucasian) completed a questionnaire assessing dispositional optimism and intolerance for uncertainty one week before taking their bar exam. Participants were

then randomly assigned to receive either a 15-minute Mindfulness Meditation (MM) video or a 15-minute Loving-kindness Meditation (LKM) video, with instructions to practice the meditations twice weekly while awaiting their exam results. The participants completed six more questionnaires over the 4-month study, the last one within one day of receiving their exam results. The questionnaires measured the same variables (coping mechanisms, coping, and worry) as the first study. Participants also rated how much they practiced and how they felt about meditating. The participants tended to practice the 15-minute meditations only once a week on average; only 41% practiced twice weekly as instructed.



Results showed that participants who tended to be pessimistic and intolerant of uncertainty at baseline coped significantly better with waiting for their results if they practiced MM than if they practiced LKM. On the other hand, the type of meditation practiced made no difference for those who tended to be optimistic and tolerant of uncertainty. Similarly, the participants who were most intolerant for uncertainty were significantly more likely to reserve that coping mechanism for the end of the waiting period if they engaged in MM, but not if they engaged in LKM. The meditations did not significantly impact worry or maintaining an optimistic attitude.

The findings suggest that a mindful disposition enhances coping during a stressful waiting period. Further, practicing mindfulness meditation has a beneficial effect on those who need it the most: people who are pessimistic and have trouble tolerating uncertainty. Mindfulness meditation did not reduce worry or increase optimism, but instead, helped participants to use "bracing for the worst" more strategically. The study is limited by the low intensity of its mindfulness intervention and low level of meditative practice by participants.