### Interventions

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


**Luberto, C. M., Wasson, R. S., Kraemer, K. M.,...Cotton, S.** (2017). *Feasibility, acceptability, and preliminary effectiveness of a 4-week...
MBCT protocol for hospital employees. *Mindfulness*. [link]


ASSOCIATIONS

Articles examining the correlates and mechanisms of mindfulness

adherence in a college sample: Comparison of a 10-min versus 20-min 2-week daily practice. *Mindfulness.* [link]


Kiken, L. G., Lundberg, K. B., Fredrickson, B. L. (2017). *Being present and enjoying it: Dispositional mindfulness and savoring the moment are distinct, interactive predictors of positive emotions and psychological health.* *Mindfulness.* [link]


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**REVIEWS**

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


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**TRIALS**

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

University of Massachusetts Medical School Worcester (R. Van Lutterveld, PI). Mindfulness meditation and real-time brain activity in schizophrenia. NIH/NIMH project # 1R03MH112040-01. [link]
A summary of select studies from the issue, providing a snapshot of some of the latest research

Being diagnosed and treated for cancer can be highly stressful, and prolonged stress often alters the body's normal stress response. For example, the amount of cortisol (a stress hormone) secreted by the adrenal gland typically varies over the course of the day, peaking upon morning awakening and gradually diminishing throughout the day. Prolonged stress blunts this biological response so that the difference between morning and afternoon cortisol levels is much smaller. Cancer survivors often show this kind of blunted cortisol response—reduced daily variation and reduced reactivity to stress. This blunting of stress reactivity is associated with greater disease progression and shorter survival times for many types of cancers. It’s possible that somehow preventing this blunting may improve patient outcomes. Prior research shows that mindfulness-based interventions (MBIs) can limit cortisol blunting across the day in breast and prostate cancer patients. Black et al. [Cancer] conducted a randomized, controlled test of whether a brief mindfulness activity could reduce the blunting of acute cortisol reactivity in colorectal cancer patients undergoing chemotherapy infusion.

The researchers randomly assigned 57 adults with colorectal cancer (average age = 54 years; 51% Male; 66% non-Hispanic, 33% Hispanic/Latino) who were undergoing chemotherapy infusion to one of three conditions: 1) a standard chemotherapy control group, 2) a chemotherapy + cancer education attention control group, and 3) a mindfulness meditation + cancer education group. Saliva samples (to assess cortisol levels) were drawn four times during the hour-long chemotherapy infusion: at the start of infusion and at three 20-minute intervals thereafter. The patients also completed self-report measures of stress, anxiety, depression, and fatigue during the past week, as well as general levels of mindfulness (using a short form of the Mindfulness Attention Awareness Scale) after the saliva collections.

The patients in the attention control group read a cancer education module during the first 20 minutes of their hour-long infusion, then rested for the remaining 40 minutes. The patients in the mindfulness group viewed a guided mindfulness meditation video during the first 12 minutes of their infusion, rested for the next 8 minutes, then read the 20-minute cancer education module, and finally rested for the last 20 minutes. The mindfulness video utilized the body scan, a meditation that emphasizes non-judgmental attention to physical sensations occurring in various areas of the body. After ascertaining that there were no significant differences between the two control groups, the data from the control groups were combined for statistical analysis.

The mindfulness group showed a significantly greater cortisol response (a greater cortisol increase from baseline) than the combined control groups. At 20 minutes into the infusion, 69% of the mindfulness group showed increased cortisol levels, whereas only 34% of the controls did. Mindfulness for all three groups combined showed a significant negative correlation with self-report measures of fatigue (r = -.46) and depression, stress, and anxiety (r = -.54), but cortisol levels did not correlate with the self-report measures, and there was no difference in the mental state ratings between groups.

This study demonstrates that the body scan can effectively increase cortisol reactivity during the acute stress of chemotherapy infusion. This is important because it represents a brief intervention that can be easily integrated into cancer care that might possibly prevent or reduce the negative cancer outcomes associated with long-term stress response blunting. The lack of correlation between cortisol levels and self-report measures is unsurprising given that the self-report measures...
assessed the patients’ mental states over an extended period of time, and not just their acute mental states during the infusion. While it’s possible that the mindfulness intervention successfully reversed cancer-induced stress-response blunting during the infusion, the study cannot definitely prove this due to the absence of pre-intervention measures of cortisol response.

When people aren’t focused on what they’re currently doing, but are instead thinking about the past, or future, or lost in fantasy, they’re said to be “mind wandering.” Psychologists estimate that people spend almost half their waking hours mind wandering, and that they are less happy when doing so. Can on-line programs intending to support attentional capacities help people decrease mind wandering? In a randomized, controlled study, Bennike et al. [Journal of Cognitive Enhancement] compared the ability of an online mindfulness training program and an online cognitive training program to improve a behavioral measure of sustained attention.

The researchers randomly assigned 137 healthy adult volunteers (average age = 42 years) to either a 4-week mindfulness training using the Headspace application, or a 4-week cognitive training using the Lumosity application. Headspace participants used the online application to practice daily guided meditations that increased in duration over time, starting at 10 minutes daily and ending at 20 minutes daily. Lumosity participants played online games designed to improve memory, attention, cognitive flexibility, processing speed, and problem solving. Lumosity users were instructed to engage in cognitive training for the same durations that Headspace users mediated. Twenty-one participants in each group were excluded from final data analysis either because they failed to show up for post-testing, or because they were discovered to have had prior mindfulness training.

All participants engaged in a Sustained Attention to Response Task (SART) before and after training. Participants were shown a series of digits on a computer screen, and told to quickly press the space bar whenever they saw a number, except for the number 3. The number 3 was presented only 10% of the time, so that participants had to press the space bar 90% of the time and refrain from pressing it 10% of the time. Success at this task requires sustained attention, and mind wandering interferes with performance outcome. All participants also completed a measure of dispositional mindfulness (the Mindfulness Attention Awareness Scale) both before and after intervention.

There was no difference between the groups before training. After training, the mindfulness group showed a significantly greater improvement in SART performance than the cognitive training group. Following training, mindfulness participants correctly refrained from pressing the space bar 68% of the time, while cognitive training participants did so only 56% of the time. Time spent in mindfulness practice correlated (r = .60) significantly with correctly refraining from pressing the space bar, but time spent in cognitive training didn’t correlate with successful performance. Mindfulness scores increased significantly for the mindfulness training group, but not for the cognitive training group. The time spent in mindfulness practice correlated with post-intervention mindfulness scores (r = .32), and post-intervention mindfulness scores correlated with SART performance (r = .39).

The study shows that online mindfulness training can improve mindfulness and sustained attention, whereas the online cognitive training program used in this study did not. Furthermore, it shows that improved mindfulness and improved sustained attention are positively correlated with each other and that both improve with increased mindfulness practice. The study is limited by the fact that SART performance is only an indirect measure of mind wandering, as it may also reflect factors such as impulse control. It is also unclear, given the limited published research to date, whether Lumosity should be considered a valid and effective cognitive training application, or whether it served more as a placebo comparison in this study.
Save the date
July, 10-13, 2018

International Conference on Mindfulness 2018

*Science from within*

**Conference outline**
*July, 10th 2018*
Pre-conference workshops

*July, 11th-13th 2018*
Conference

**Presenters**
Mark Williams, Ruth Baer, Ron Epstein, Stephen and Martine Batchelor, Judson Brewer and others

**Scientific Chairs**
Prof.dr. Anne Speckens
Radboud University

Prof.dr. Susan Bögels
University of Amsterdam

**Location**
Amsterdam, The Netherlands

**Important dates**
*October, 10th 2017*
Registration open

*January, 10th 2018*
Deadline symposia

*March, 10th 2018*
Deadline early bird registration

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