

[Dr. David Rabiner](#)
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About Dr. David Rabiner

Dr. David Rabiner is a child clinical psychologist and Director of Undergraduate Studies in the Department of Psychology and Neuroscience at Duke University. His research focuses on various issues related to ADHD, the impact of attention problems on academic achievement, and attention training. He also publishes Attention Research Update, a complimentary online newsletter that helps parents, professionals, and educators keep up with the latest research on ADHD.

[Mindfulness Meditation for Adults & Teens with ADHD](#)

We have talked about the value of meditation before (see [Mindfulness and Meditation in Schools](#)), as a form of well-directed mental exercise that can help train attention and emotional self-regulation. Which other studies have shown how it strengthens specific parts of the brain, mainly in the frontal lobe.

Dr. Rabiner shares with us, below, an excellent review of a new study that analyzes the benefits of mindfulness for adolescents and adults with attention deficits. He writes that "although this is clearly a preliminary study, the results are both interesting and encouraging."

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Does Mindfulness Meditation Help Adults & Teens with ADHD

-- By Dr. David Rabiner

Although medication treatment is effective for many individuals with ADHD, including adolescents and adults, there remains an understandable need to explore and develop interventions that can complement or even substitute for medication. This is true for a variety of reasons including:

- 1) Not all adults with ADHD benefit from medication.
- 2) Among those who benefit, many have residual difficulties that need to be addressed via other means.
- 3) Some adults with ADHD experience adverse effects that prevent them from remaining on medication.

Because of the widespread interest in new ADHD interventions - particularly non-pharmaceutical approaches - I try to cover credible research in this area whenever I come across it. I was thus pleased to learn about a very interesting study of mindfulness meditation as a treatment for adults and adolescents with ADHD that was published in the Journal of Attention Disorders [Zylowka, et al. (2008). Mindfulness meditation training in adults and adolescents with ADHD. Journal of Attention Disorders, 11, 737-746.]

According to the authors, "...mindfulness meditation involves experiential learning via silent periods of sitting meditation or slow walking and purposeful attention to

daily activities. Relaxation, although often induced during the training, is not the sole goal of the activity; rather, the main activity is a cognitive and intention-based process characterized by self-regulation and attention to the present moment with an open and accepting orientation towards one's experiences."

In recent years, mindfulness meditation has a new approach for stress reduction and has been incorporated into the treatment for a variety of psychiatric disorders, including depression, anxiety, and substance abuse. Of special relevance to the treatment of ADHD are findings that meditation has the potential to regulate brain functioning and attention. For example, research has demonstrated that mindfulness meditation can modify attentional networks, modulate EEG patterns, alter dopamine levels, and change neural activity.

As conceptualizations of ADHD now increasingly recognize the importance of executive functioning and self-regulation in the disorder, mindfulness meditation - which can be thought of as a type of attention/cognitive exercise program that is focused in improving self-regulation - is a complementary treatment that is well worth investigating. However, although a few small studies of meditation training in children with ADHD have yielded promising results, no research on the use of mindfulness training in adolescents and adults with ADHD has been published.

- Participants -

Participants were 24 adults and 8 adolescents (62% female) diagnosed with ADHD following a comprehensive evaluation. Eight participants fell 1 symptom short of meeting full diagnostic criteria and were considered to have "probable ADHD." The average age was 48.5 for adults and 15.6 for adolescents. About two-thirds were being treated with stimulant medication and continued on medication during the study. As with many adults and adolescents diagnosed with ADHD, the majority had struggled with other psychiatric disorders in their lifetime, with mood disorders being particularly common.

- Mindfulness Training -

Mindfulness meditation is described as involving 3 basic steps: 1) bringing attention to an "attentional anchor" such as breathing; 2) noting that distraction occurs and letting go of the distraction; and, 3) refocusing back to the "attentional anchor".

This sequence is repeated many times during the course of each meditative session. As the individual becomes better able to maintain focus on the attentional anchor, the notion of "paying attention to attention" is introduced and individuals are encouraged to bring their attention to the present moment frequently during the course of the day.

By directing one's attention to the process of paying attention, to noticing notice when one becomes distracted, and to refocusing attention when distraction occurs, mindfulness meditation training can be thought of as an "attention training" program. As such, examining the impact of such training on individuals with ADHD becomes a very interesting question to pursue.

- Mindfulness Training Program -

The mindfulness training program lasted for 8 weeks; each week included one 2.5 hour training session and daily at-home practice sessions.

Weekly training sessions followed a consistent format. The sessions began with a short meditation, followed by a discussion of at-home practice, the introduction and practicing of new exercises, planning for at-home practice sessions for the following week, and a closing sitting meditation. The at-home practice sessions consisted of "...gradually increasing formal meditation and various mindful awareness in daily living exercises." For the at-home practice sessions, participants received 3 CDs containing guided sitting meditations that began at 5 minutes and increased to 15 minutes.

To adapt traditional mindfulness meditation practice to the unique needs of adolescents and adults with ADHD, several modifications to traditional practice were made. First, the 8-week program included educational information on the symptoms, etiology, and biology of ADHD. Second, sitting meditations were shorter than required in similar programs (45 minutes of at-home practice is typically recommended) and walking meditation could be substituted for sitting meditation. Third, visual aids were incorporated to help explain mindful awareness concepts. And, fourth, a loving-kindness mediation, i.e., an exercise of wishing well to self and others) was incorporated at the end of each session to address the low self-esteem often associated with ADHD.

- Measures -

Pre- and posttest assessments included individual self-report scales of ADHD, depression, and anxiety as well as several cognitive tests that were administered when participants were off medication. Attention was assessed using a computerized assessment called the Attention Network Test that measures 3 aspects of attention: alerting (maintaining a vigilant state of preparedness), orienting (selecting a stimulus among multiple inputs), and conflict (prioritizing among competing tasks). Neuropsychological tests that assessed working memory and the ability to shift attention sets (Trails A and B) were also included. At the end of the training, participants were also asked to rate their overall satisfaction with the training.

- Results -

Seventy-eight percent of participants (25 of 33) completed the study. On average, participants attended 7 of the 8 weekly training sessions. Adults reported an average of 90 minutes and 4.6 sessions per week of at-home meditation practice; adolescents averaged 43 minutes and 4 sessions of weekly at-home practice. Both adolescents and adults who completed the program reported high levels of satisfaction with it - average scores above 9 on a 1 to 10 satisfaction scale.

Seventy-eight percent of participants reported a reduction in total ADHD symptoms, with 30% reporting at least a 30% symptom reduction (a 30% reduction in symptoms is often used to identify clinically significant improvement in ADHD medication trials). Because the majority of participants were receiving medication treatment, for many these declines represent improvement above and beyond what benefits were already being provided by medication.

On neurocognitive test performance, significant improvements were found on the measure of attentional conflict and on several other neuropsychological tests (i.e., Stroop color-word test and Trails A and B) but not for measures of working memory.

For adults, significant reductions in depressive and anxiety symptoms were reported. Comparable reductions in these symptoms were not evident in adolescents.

- Summary and Implications -

Results from this study indicate that mindfulness meditation training may be a beneficial complementary treatment approach for adolescents and adults with ADHD. Positive findings include: 1) the absence of any reported adverse events; 2) highly favorable ratings of the treatment by participants; 3) reductions in self-reported ADHD symptoms reported by over three quarters of participants, even though the majority were already being treated with medication; 4) significant improvement on several of the neuropsychological measures; and, 5) reductions in depressive and anxiety symptoms for the adults.

The authors are appropriately cautious in discussing their findings and suggest that the study supports the "...feasibility and potential utility of mindfulness meditation in at least a subset of adults and adolescents with ADHD." They are careful to note, however, that this was a pilot study with a small sample, and that the reported pre-post changes in behavioral and neurocognitive measures should be "...considered exploratory given the absence of a control group and reliance on self-report measures of psychiatric symptoms."

Given the promising results obtained in this pilot study, there is a clear need for a more extensive research on mindfulness meditation training as an intervention for ADHD. In the meantime, although mindfulness meditation could not be considered a scientifically supported treatment for ADHD, it may have benefits as a complementary treatment and is highly unlikely to have any adverse effects.

I find it both encouraging and exciting that there seems to be growing interest among ADHD researchers to explore the scientific support for complementary approaches such as mindfulness meditation training and to subject a wider range of treatments subjected to rigorous scientific research. This has not always been the case and it would be wonderful if this trend were to continue. I hope that the authors of this study are already in the midst of the controlled trial that they call for and will certainly continue to cover these kinds of interesting investigations in Attention Research Update as they appear in the literature.



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