

Mindfulness-based interventions: Effective for depression and anxiety

Evidence supports adjunctive role for the combination of meditative practices and CBT

Mr. A, age 45, reports irritability, loss of interest, sleep disturbance, increased self-criticism, and decreased self care during the last month after a promotion at work. He has a history of 3 major depressive episodes, 1 of which required hospitalization. For the last 2 years his depressive symptoms had been successfully managed with escitalopram, 10 mg/d, plus bupropion, 150 mg/d. Mr. A wants to discontinue these medications because of sexual dysfunction. He asks if nonpharmacologic strategies might help.

One option to consider for Mr. A is mindfulness-based cognitive therapy (MBCT), which was originally developed to help prevent depressive relapse. MBCT also can reduce depression and anxiety symptoms. More recently, MBCT was shown to help individuals discontinue antidepressants after recovering from depression.

Regular mindfulness meditation has been shown to result in structural brain changes that may help explain how the practice effectively addresses psychiatric symptoms (*Box, page 40*). With appropriate training, psychiatrists can help patients reap the benefits of this cognitive treatment.

What is mindfulness meditation?

Meditation refers to a variety of practices that intentionally focus attention to help the practitioner disengage from unconscious absorption in thoughts and feelings. Unlike concentrative meditation—in which practitioners focus attention on a single object such



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Mindfulness for depression

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Mindfulness is nonjudgmental; each thought, feeling, or sensation is acknowledged and accepted as is

Box

How mindfulness attunes the brain to the body

Regular mindfulness practice has been shown to increase cortical thickness in areas associated with attention, interoception, and sensory processing, such as the prefrontal cortex and right anterior insula.^a This supports the hypothesis that mindfulness is a way of attuning the mind to one's internal processes, and that this involves the same social neural circuits involved in interpersonal attunement—middle prefrontal regions, insula, superior temporal cortex, and the mirror neuron system.^b

Amygdala responses. Mindfulness improves affect regulation by optimizing prefrontal cortex regulation of the amygdala. Recent developments in understanding the pathophysiology of depression have highlighted the lack of engagement of left lateral-ventromedial prefrontal circuitry important for the down-regulation of amygdala responses to negative stimuli.^c Dispositional mindfulness is associated with greater prefrontal cortical activation and associated greater reduction in amygdala activity during affect labeling tasks, which results in enhanced affect regulation in individuals with higher levels of mindfulness.^d

Left-sided anterior activation. Other researchers have examined mindfulness' role in maintaining balanced prefrontal asymmetry. Relative left prefrontal activation is related to an affective style characterized by stronger tendencies toward positive emotional responses and approach/reward oriented behavior, whereas relative right-sided activation is associated with stronger tendencies toward negative emotional responses and avoidant/withdrawal oriented behavior.

One study found significant increases in left-sided anterior activation in mindfulness-based stress reduction participants compared with controls.^e Similarly, in a study evaluating the effect of mindfulness-based cognitive therapy (MBCT) on frontal asymmetry in previously suicidal individuals, MBCT participants retained a balanced pattern of prefrontal activation, whereas the treatment-as-usual group showed significant deterioration toward decreased relative left frontal activation. These findings suggest a protective effect of the mindfulness intervention.^f

Source: For references to studies described here, see this article at CurrentPsychiatry.com

as a word (mantra), body part, or external object—in mindfulness meditation participants bring their attention to a wide range of objects (such as breath, body, emotions, or thoughts) as they appear in moment-by-moment awareness.

Mindfulness is a nonjudgmental, present-centered awareness in which each thought, feeling, or sensation that arises in the attentional field is acknowledged and accepted as it is.¹⁻³ Bishop et al⁴ defined a 2-component model of mindfulness:

- self-regulating attention of immediate experience, thereby allowing for increased recognition of mental events in the present moment
- adopting an orientation of curiosity, openness, and acceptance toward one's experiences in each moment.

Mindfulness-based interventions

Buddhist and Western psychology inform the theoretical framework of most mindfulness-based clinical interventions, such as:

- acceptance and commitment therapy (ACT)
- dialectical behavioral therapy (DBT)
- mindfulness-based stress reduction (MBSR)
- MBCT.

Because mindfulness is only 1 of several components of ACT and DBT,⁵ this review focuses on MBCT and MBSR, in which teaching mindfulness skills is the central focus of treatment.

MBCT and MBSR. MBCT incorporates many aspects of the manualized MBSR treatment program developed for managing chronic pain.^{6,7} MBSR is devoted almost entirely to cultivating mindfulness through:

- formal mindfulness meditation practices such as body scan (intentionally bringing awareness to bodily sensations), mindful stretching, and mindfulness of breath/body/sounds/thoughts
- informal practices, including mindfulness of daily activities such as eating.¹

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Table 1

Skills and practices taught in mindfulness training

MBCT session themes	Mindfulness skill	Associated practices
'Automatic pilot' (acting without conscious awareness)	Awareness of automatic pilot Awareness of body	Mindful eating Body scan (intentionally bringing awareness to bodily sensations)
Dealing with barriers	Awareness of how the chatter of the mind influences feelings and behaviors	Body scan Short breathing meditation
Mindfulness of the breath	Awareness of breath and body	Breathing meditation 3-minute breathing space Mindful yoga
Staying present	Awareness of attachment and aversion	Breathing meditation Working with intense physical sensations
Acceptance	Acceptance of thoughts and emotions as fleeting events	Explicit instructions to practice acceptance are included in the breathing meditation and the 3-minute breathing space
Thoughts are not facts	Decentering or re-perceiving	Sitting meditation (awareness of thoughts)
How can I best take care of myself?	Awareness of signs of relapse; develop more flexible, deliberate responses at time of potential relapse	3-minute coping breathing space
Dealing with future depression	Awareness of intention	Identifying coping strategies to address barriers to maintaining practice

MBCT: mindfulness-based cognitive therapy
Source: Reference 2

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MBCT integrates mindfulness training with cognitive therapy techniques

MBSR typically involves 8 to 10 weekly group sessions of 2 to 2.5 hours with 10 to 40 participants with heterogeneous or homogenous clinical presentations. At each session, patients are taught mindfulness skills and practices. Typically, a full day of meditation practice on a weekend follows session 5 or 6. Participants also engage in a daily meditation practice and homework exercises directed at integrating awareness skills into daily life.

Meta-analytic and narrative reviews generally support MBSR's efficacy for a wide range of clinical presentations, including improved quality of life for chronic pain and cancer patients.^{5,8-11} Variability in the methodologic rigor of clinical trials of mindfulness-based interventions—such as lack of active control groups and small sample sizes—limits the strength of these studies' conclusions, however.⁸

MBCT integrates the mindfulness

training of MBSR with cognitive therapy techniques (*Table 1*) to prevent the consolidation of ruminative, negative thinking patterns that contribute to depressive relapse.² These cognitive therapy techniques include:

- psychoeducation about depression symptoms and automatic thoughts
- exercises designed to demonstrate the cognitive model
- identifying activities that provide feelings of mastery and/or pleasure
- creating a specific relapse prevention plan.

In addition, MBCT introduces a new informal meditation—the 3-minute breathing space—to facilitate present-moment awareness in upsetting everyday situations.

Evidence supporting MBCT comes from randomized, controlled trials (RCTs) and uncontrolled trials (*Table 2, page 46*).¹²⁻¹⁸

continued



Mindfulness for depression

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MBCT was shown to reduce depressive symptoms, anxiety, and risk of depressive relapse

Table 2

Evidence of reduced depressive symptoms, anxiety with MBCT

Study	Patients	Findings
Randomized controlled trials		
Kuyken et al, 2008¹²	123 patients with recurrent depression treated with antidepressants received maintenance antidepressants alone or adjunctive MBCT with support to taper/discontinue antidepressant therapy	Adjunctive MBCT was as effective as maintenance antidepressants in reducing relapse/recurrence rates but more effective in reducing residual depressive symptoms and improving quality of life; 75% in the MBCT group discontinued antidepressants
Kingston et al, 2007¹³	19 outpatients with residual depressive symptoms following a depressive episode assigned to MBCT or treatment as usual	MBCT significantly reduced depressive symptoms, and these improvements were maintained over a 1-month follow-up period
Williams et al, 2008¹⁴	14 patients with bipolar disorder who had no manic episodes in the last 6 months and ≤ 1 week of depressive symptoms in the last 8 weeks	MBCT resulted in a significant reduction in anxiety scores on the BAI compared with wait-list controls
Uncontrolled trials		
Eisendrath et al, 2008¹⁵	15 patients with treatment-resistant depression (failure to remit with ≥ 2 antidepressant trials)	MBCT significantly reduced anxiety and depression; increased mindfulness and decreased rumination and anxiety were associated with decreased depression
Finucane and Mercer, 2006¹⁶	13 patients with recurrent depression or recurrent depression and anxiety	MBCT significantly reduced depression and anxiety scores on BDI-II and BAI
Kenny and Williams, 2007¹⁷	46 depressed patients who had not fully responded to standard treatments	MBCT significantly reduced depression scores
Ree and Craigie, 2007¹⁸	26 outpatients with mood and/or anxiety disorders	MBCT significantly improved symptoms of depression, anxiety, stress, and insomnia; improvements in insomnia were maintained at 3-month follow-up

BAI: Beck Anxiety Inventory; BDI-II: Beck Depression Inventory; MBCT: mindfulness-based cognitive therapy

A systematic review of RCTs supported using MBCT in addition to usual care to prevent depressive relapse in individuals with a history of ≥ 3 depressive episodes.¹⁹ Since that review was published, a large RCT (123 patients) comparing antidepressant medication alone to antidepressants plus adjunctive MBCT with support to taper/discontinue antidepressant therapy found:

- MBCT comparable to maintenance antidepressant medication in preventing depressive relapse for individuals with ≥ 3 depressive episodes

- no difference in cost between these 2 treatments.¹²

In this study, MBCT was more effective than maintenance pharmacotherapy in reducing residual depressive symptoms and in improving quality of life; 75% in the MBCT group discontinued antidepressants. MBCT is included in the United Kingdom's National Institute for Clinical Excellence Clinical Practice Guidelines for Depression²⁰ for prevention of recurrent depression.

RCTs and uncontrolled studies have shown that MBCT reduces depressive

and anxious symptoms in individuals suffering from mood disorders. In an open-label pilot study of MBCT's efficacy in reducing depressive symptoms in patients with treatment-resistant depression and ≥ 3 depressive episodes, 61% of patients achieved a post-MBCT Beck Depression Inventory-II (BDI-II) score < 14 , which represents normal or near-normal mood (mean BDI-II scores decreased from 24.3 to 13.9; effect size 1.04).¹⁷

Mindfulness for other psychiatric conditions. A review by Toneatto and Nguyen²¹ of MBSR in the treatment of anxiety and depression symptoms in a range of clinical populations concluded that the evidence supporting a beneficial effect was equivocal. On the other hand, several uncontrolled studies and 1 RCT indicate that mindfulness-based treatments can reduce symptoms in other psychiatric conditions, including eating disorders,²² generalized anxiety disorder,²³ bipolar disorder,²⁴ and attention-deficit/hyperactivity disorder.²⁵ Many of these studies were developed to target mood and anxiety symptoms by linking mindfulness and symptom management; this differs from MBSR, which focuses on stress reduction. Methodologically rigorous studies are necessary to evaluate mindfulness-based treatments in these and other psychiatric conditions.

CASE CONTINUED

Explaining the potential benefits

You inform Mr. A that MBCT has been shown to improve acute mild-to-moderate depressive symptoms, may decrease his risk of depressive relapse by 50%²⁶ and could help him discontinue his medications.¹² He asks how mindfulness exercises will help his symptoms.

How mindfulness works

The assumption that increased mindfulness mediates treatment outcomes⁴ has been addressed systematically only recently, following the development of operational definitions of mindfulness and self-report mindfulness measures, including the:

- Mindful Attention Awareness Scale (MAAS)²⁷

Table 3

Recommended process for becoming an MBCT instructor

Complete a 5-day residential MBCT training program
Attend a 7- to 10-day residential mindfulness meditation retreat
Establish your own daily mindfulness meditation practice
Undergo professional training in cognitive therapy
Gain experience leading psychotherapy groups
MBCT: mindfulness-based cognitive therapy Source: References 2,33

- Five Facet Mindfulness Questionnaire (FFMQ)¹²
- Toronto Mindfulness Scale (TMS).²⁸

Uncontrolled studies using these measures demonstrated that self-reported mindfulness increased following MBSR^{28,29} and MBCT^{15,18} in individuals with general stress, anxiety disorder or primary depression, cancer, chronic pain disorder, diabetes, and multiple sclerosis. Accumulating evidence from 1 RCT³⁰ and 2 other uncontrolled studies^{28,31} demonstrates that mindfulness is associated with symptom reduction following MBSR.

Researchers have begun to focus on how mindfulness skills reduce symptoms. Baer⁹ proposed several mechanisms, including:

- cognitive change
- improved self-management
- exposure to painful experiences leading to reduced emotional reactivity.

Cognitive change—also called meta-cognitive awareness—is the development of a “distanced” or “decentered” perspective in which patients experience their thoughts and feelings as “mental events” rather than as true, accurate versions of reality. This is thought to introduce a “space” between perception and response that enables patients to have a reflective—rather than a reflexive or reactive—response to situations, which in turn reduces vulnerability to psychological processes that contribute to emotional suffering. Some preliminary evidence suggests that MBCT-associated increases

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Mindfulness-based treatments may reduce symptoms of eating disorders, ADHD, GAD, and other psychiatric conditions

addition, monitoring of orthostatic vital signs should be considered in elderly patients for whom orthostatic hypotension is of concern [see *Warnings and Precautions* (5.7) in full PI]. Concomitant use with furosemide in Elderly Patients with Dementia-Related Psychosis In two of four placebo-controlled trials in elderly patients with dementia-related psychosis, a higher incidence of mortality was observed in patients treated with furosemide plus oral risperidone when compared to patients treated with oral risperidone alone or with oral placebo plus furosemide. No pathological mechanism has been identified to explain this finding, and no consistent pattern for cause of death was observed. An increase of mortality in elderly patients with dementia-related psychosis was seen with the use of oral risperidone regardless of concomitant use with furosemide. RISPERDAL® CONSTA® is not approved for the treatment of patients with dementia-related psychosis. [See *Boxed Warning and Warnings and Precautions*]

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Table 4

Useful mindfulness resources for interested patients

Insight Meditation Society: www.dharma.org
Kabat-Zinn J. MBSR meditation CDs/tapes: www.stressreductiontapes.com
Recordings of meditation (dharma) talks: www.dharmaseed.org
Salzberg S, Goldstein J. Insight meditation: an in-depth correspondence course. Louisville, CO: Sounds True, Inc; 2004
Williams M, Teasdale J, Segal Z, et al. The mindful way through depression: freeing yourself from chronic unhappiness. New York, NY: Guilford Press; 2007

in metacognitive awareness reduce risk of depressive relapse.³²

Teaching mindfulness

Guidelines for psychiatrists who wish to become MBCT instructors suggest undergoing formal teacher development training, attending a 7- to 10-day meditation retreat, and establishing your own daily mindfulness practice (Table 3, page 47).³³ Segal et al² also recommend recognized training in counseling, psychotherapy, or as a mental health professional, as well as training in cognitive therapy and having experience leading psychotherapy groups.

The recommendation that a mindfulness teacher should practice meditation derives from the view that instructors teach from their own meditation experience and embody the attitudes they invite participants to practice. In an RCT, patients of psychotherapists in training (PiTs) who practiced meditation had greater symptom reductions than those of PiTs who did not engage in meditation.³⁴

To cultivate your own mindfulness practice, consider enrolling in an MBSR group, participating in an MBCT training retreat (see *Related Resources*, page 54), or attending a mindfulness meditation retreat.

Although patient access to MBCT and MBSR programs has been increasing, formal MBSR/MBCT group programs led by trained therapists are limited. Patients can go through an MBSR/MBCT book with a trained clinician or listen to



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Patients can use mindfulness skills to develop a 'distanced' perspective that may reduce psychological vulnerability

Related Resources

- Germer CK, Siegel R, Fulton PR, eds. *Mindfulness and psychotherapy*. New York, NY: Guilford Press; 2005.
- Mindfulness-based cognitive therapy. www.mbct.com; www.mbct.co.uk; www.bangor.ac.uk/mindfulness.
- Center for Mindfulness in Medicine, Health Care, and Society. www.umassmed.edu/cfm.
- Neurobiology of mindfulness. www.mindfulness-matters.org.
- Siegel DJ. *The mindful brain: reflection and attunement in the cultivation of well-being*. New York, NY: Norton; 2007.
- University of California, San Diego Center for Mindfulness. <http://cme.ucsd.edu/mindfulness>.

Drug Brand Names

Bupropion • Wellbutrin
Escitalopram • Lexapro

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audio recordings with guided meditation instructions. Alternately, they can join a meditation sitting group or an insight meditation correspondence course (*Table 4, page 53*).

CASE CONTINUED

Daily mindfulness practice

Mr. A enrolls in and completes a group MBCT program. He rearranges his schedule to include 30 minutes of formal mindfulness practice daily. During an office visit after completing the MBCT course, he describes decreased irritability and self-criticism, newfound self-acceptance, an increased ability to tolerate previously distressing affect, and the ability to set realistic expectations of himself, particularly in light of increased responsibilities at work.

He also reports an increased sense of engagement in and reward in his personal life.

Several months later he requests and successfully completes an antidepressant taper and has no recurrence of depressive episodes at 18-month follow-up. He participates in monthly meditation groups to support his home practice.

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Bottom Line

Mindfulness-based cognitive therapy (MBCT) provides patients with tools to target symptoms such as affect regulation, impulse control, and rumination. Evidence supports using MBCT in addition to usual treatment to prevent depressive relapse and suggests efficacy in improving symptoms of depression and anxiety.

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Guidelines suggest that before teaching MBCT, psychiatrists develop their own daily mindfulness meditation practice



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