

CHAPTER 15

Mindfulness Meditation

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Mindfulness meditation is one of the two traditionally identified forms of meditative practice, along with concentrative meditation (Goleman, 1988). Mindfulness meditation, also referred to as “insight meditation” or “Vipassana practice,” is playing an increasingly large role in defining how meditation can contribute to therapeutic growth and personal development. Although all meditation techniques cultivate the ability to focus and manage attention, mindfulness meditation primarily cultivates an ability to bring a nonjudgmental sustained awareness to the object of attention rather than cultivating focused awareness of a single object, such as a word or mantra, as occurs in concentrative meditation (see Carrington, Chapter 14, this volume). Virtually all meditative approaches combine elements of both concentrative and mindfulness practice, but for therapeutic purposes, there are important differences in technique and application. In mindfulness meditation, attention is purposefully kept broader, utilizing a more open and fluid focus but without engaging analytical thought or analysis. Mindfulness meditation may utilize any object of attention—whether an emotion, the breath, a physical feeling, an image, or an external object—such that there is more flexibility in the object of awareness than there is in concentrative meditation and such that the object may shift from moment to moment.

HISTORY OF MINDFULNESS MEDITATION: FROM TRADITIONAL PRACTICE TO CONTEMPORARY THEORIES

Although the therapeutic use of mindfulness meditation is often associated with the Mindfulness-Based Stress Reduction group program developed by Jon Kabat-Zinn (Kabat-Zinn, 1990, 2005) or a variant of it, there is a substantial and growing clinical literature on integrating mindfulness meditation into individual therapy (Brach, 2003; Delmonte, 1990a, 1990b, 1990c; Forester, Kornfeld, Fleiss, & Thompson, 1993; Fulton, 2005; Germer, Siegel, & Fulton, 2005; Kornfield, 1993; Rubin, 1985, 1996). Mindfulness techniques, including brief meditation, are also used in dialectical behavior therapy (Linehan, 1993a, 1993b). Concepts of mindfulness are also central to Hayes’s work on

acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999), although ACT does not utilize formal meditation practice. Other therapeutic uses of mindfulness meditation practices include very traditional retreat-based programs (Hart, 1987) and, alternatively, use of meditation-type practices primarily within individual therapy sessions (Emmons, 1978; Emmons & Emmons, 2000; Germer et al., 2005).

All of these approaches have been informed in various ways by traditional mindfulness meditation practices, mostly based in Buddhism. However, meditative practices exist in virtually all religious traditions (Walsh & Shapiro, 2006). Buddhism contains a wide range of traditions with distinct practices. Mindfulness meditation is most commonly associated with the contributions of Americans who entered monastic training in Asia, particularly in the Thai Theravadan tradition, most notably psychologist Jack Kornfield (1993) and Sharon Salzberg (1999), who were central in founding the Insight Meditation Society in 1976. Burmese traditions have influenced Brown and Engler's work (1984) and are reflected in the 10-day retreat programs of Goenka (Hart, 1987). Mindfulness elements are also strongly represented in Tibetan meditation. Tibetan meditation was first introduced in the early 1970s by Chogyam Trungpa Rinpoche, who founded the Naropa Institute in Boulder, Colorado, dedicated to teaching Tibetan and Buddhist studies and psychology. Interest in Tibetan meditation practices has been growing rapidly in the past decade due to the influence of the Dalai Lama and through continued efforts by psychologists to investigate the impact of traditional Tibetan meditation practices on emotional and physical self-regulation (Davidson et al., 2003; Goleman, 2003). Another influential Asian teacher is Thich Nhat Hanh (Hanh, 1975), a Vietnamese monk who has resided for many years in France and whose lineage is influenced by both Theravadan and Chinese Zen (Ch'an) Buddhism. His prolific and approachable writings both universalize (Hanh, 1995) and broaden mindfulness approaches; he is particularly associated with using loving kindness meditation (Hanh, 1997) and contemplative walking meditation (Hanh, 1991) as central practices. Although Zen meditation is not always considered as one of the mindfulness meditation traditions, many aspects of Zen practice, such as *shinkantaza* ("just sitting"), are essentially mindfulness practices and had early influence on the incorporation of meditation and Buddhist perspectives into psychotherapy (Fromm, 1994; Horney, 1945, 1987; Stunkard, 1951, 2004). The Zen tradition continues to influence therapeutic practices through the work of Marsha Linehan (Linehan, 1993a, 1993b), Jeffrey Rubin (Rubin, 1996, 1999), and others (Germer et al., 2005; Mruk & Hartzell, 2003; Rosenbaum, 1998). Zen practice in the United States also draws on Korean traditions (Coleman, 2001), which influenced Kabat-Zinn's work, among others.

THEORETICAL FOUNDATIONS: MEDITATION AS A COGNITIVE PROCESS

Hundreds of studies on a wide range of meditation effects have been conducted, both on concentrative and, increasingly, on mindfulness-based techniques (Baer, 2003; Delmonte, 1985; Murphy, Donovan, & Taylor, 1999; D. H. Shapiro & Walsh, 1984; S. L. Shapiro & Walsh, 2003, 2004). The stress management effects of meditation practice have most commonly been construed as a function of physical relaxation (Benson, 1975; Ghoncheh & Smith, 2004; Smith & Novak, 2003; Smith, 2003, 2004; Smith & Joyce, 2004), but it can be argued that meditation effects are better conceptualized as a function of the cognitive-attentional processes that are engaged (Austin, 2006; Bishop et al., 2004; Boals, 1978; Gifford-May & Thompson, 1994; Kristeller, 2004; Teasdale, Segal, & Wil-

liams, 1995; Wallace, 2006; Walsh & Shapiro, 2006). Furthermore, as a function of cultivating such processes, the effects of meditation are well understood to develop in stages, with practice (Austin, 2006; Brown & Engler, 1980), consistent with the model presented here.

Mindfulness meditation involves the cultivation of moment-to-moment, nonjudgmental awareness of one's present experience, whether narrowly or more broadly focused. The goal of these practices is to cultivate a stable and nonreactive awareness of one's internal (e.g., cognitive-affective-sensory) and external (social-environmental) experiences. Therefore, it can be argued that it is the development of stable attention and nonjudgmental awareness that mediates the much wider range of effects, including physical relaxation, emotional balance, behavioral regulation, and changes in self-judgment, self-awareness, and relationship to others. Improvements in each of these areas of functioning may then decrease the experience of stress. Although other mediating processes may also be involved, including direct effects on physiological aspects of stress and relaxation, meditation practice is better conceptualized as a way of changing usual processes of attention, awareness, and cognition. These attentional skills enable one to disengage from or limit usual emotional or analytical reactivity to the object of attention and to respond to life more mindfully. Suspending these habitual patterns of reactivity may then facilitate the emergence of self-regulatory functions that are experienced as healthier, more balanced, or somehow "wiser," in an enduring way, and reflective of sustained neurophysiological change (Davidson et al., 2003; Lazar et al., 2000; Lutz, Greischar, Rawlings, Ricard, & Davidson, 2004).

Meditation may not be unique in its ability to facilitate this type of processing, but evidence suggests that the adaptation of these tools from their traditional roots to a therapeutic context is promising. Although concentrative techniques also cultivate attentional stability, with a wide range of documented effects, mindfulness practices may more quickly engage nonreactive awareness and growth within particular areas of functioning. The very limited evidence to date (Dunn, Hartigan, & Mikulas, 1999) suggests that somewhat different neuropsychological processes are engaged in concentrative versus mindfulness practices.

The question remains: How do changes in the processes of attention and awareness create the wide range of effects observed with meditative practice? Our perceptual processes are inherently designed to constantly scan our external environment for sources of danger, for sources of gratification, and for novelty—or the unknown. We now understand that such scanning includes our internal world as much as the external; in Buddhist psychology, thoughts are considered one of the "senses," comparable to sight, hearing, touch, taste, and smell. Thoughts and emotional responses arise and are then observed and responded to as if they were "real." Not only are these responses the result of imposed meaning on the stimuli that impinge on our brains, but they also engender further reactions, thoughts, feelings, and behavior. In fact, cognitive psychotherapy is largely based on the premise that we construct much of our reality through this imposed meaning. The body then responds as though the external or internal experiences were actual danger signals; a physiological preparedness occurs that is marked by changes in blood pressure, heart rate, muscle tension, and so forth. Cognitive therapy acts directly on these meaning experiences by directing us to substitute alternative content—by substituting optimistic thoughts for pessimistic thoughts or by reframing the meaning of particular experiences. Behavioral therapy works by repeatedly changing the pairing of actual triggers and responses through extinction or by practice. Meditation acts somewhat differently, although it can readily be integrated into cognitive or behavioral treatments.

First, meditation provides a way to passively disengage attention from whatever signal is impinging on the mind, whether threatening or engaging. It does this in several ways. The most basic is by resting attention on relatively meaningless repetitive stimuli, such as the mantra in concentrative meditation or the breath in mindfulness meditation; this process may have stress-reducing effects similar to those resulting from use of any distracter, but it is different in that the mind is not then caught up in some alternative source of attention. Linked to this process, but heightened in mindfulness meditation, is the means to observe the occurrence of patterns of conditioned reacting, a type of reflective self-monitoring. In this way, mindfulness meditation involves the cultivation of bare attention, of training the process of attention in and of itself, rather than as a function of the level of engagement with the object. Learning to attend without engaging in the usual train of thinking creates the possibility of suspension of reactivity. This process may share similarities with systematic desensitization in that a deconditioning process occurs. In mindfulness meditation, rather than using a mantra to distract oneself, one simply observes the object of attention without reacting, responding, or imposing further meaning or judgment on it. Doing this has several effects. First, at the conscious level, one becomes aware that most physical or emotional experiences are unstable; they rise and fall, rather than being constant. Second, by disengaging the stimulus from the response over and over again, the mind creates different patterns of responding, much as is recognized to occur in contemporary learning theory. Third, one becomes aware of an increased ability to purposefully disengage from the usual chatter of the conscious mind; this is often experienced as a sense of liberation and freedom, a release from operating on "automatic."

A final step can then occur. The process of suspending reactivity also appears to create the opportunity for more integrated responses to occur. With the suspension of our usual, conditioned, or overly determined responses, we may experience an increased emergence of more novel, creative, or "wiser" perspectives on life challenges. Once the overdetermined conditioned, reactive (and dysfunctional) response is suspended, a new reintegration or synchronization of other neural networks becomes possible. The process of deconditioning, of disengaging the most immediate associative responses, allows a broader range of connections and perspectives. Patients often report that they observe their alternative choices as fresh and in some way unexpected yet emerging from their own capabilities rather than being directed or prescribed from the outside, often experienced as a growing sense of insight and wisdom. One of the challenges to understanding the neuropsychological processes underlying these effects of meditation is determining how or why these emergent realizations generally appear to be positive or "wise" in quality rather than simply random or novel. Spiritual growth as a function of meditation practice may also occur as a function of disengagement of more immediate "survival" needs; although examination of the neurophysiological processes underlying spiritual or mystical experience is at an exploratory stage (Austin, 1998, 2006; D'Aquili & Newburg, 1998), meditation practice is almost universally used to cultivate such experiences, and the processes appear to involve a disengagement and then most likely a potentiation of neurological functions specific to spiritual experience.

To review, meditation can affect the stress response in four separate stages: First, it provides a way to free the senses from whatever is pulling at them. Second, with somewhat more practice, mindfulness meditation provides a way to observe patterns of responding or reacting, as they occur. Third, with yet more practice, conditioned reactions and responses to these sense objects gradually disengage and weaken. Finally, in the course of this uncoupling, meditation allows more integrative, "wiser," or distinct levels of processing to emerge, contributing to more effective responses. In conceptualizing

meditation practice as operating through these general principles, it becomes clearer how such a relatively simple process can have such wide-ranging impact, from physiological relaxation to spiritual awakening. Specific therapeutic goals may be facilitated by directing meditation awareness toward the target of concern, such as anxiety symptoms or ruminative thinking. As appreciation grows for the unique ways in which meditative practices may cultivate these powerful regulatory processes, investigation of meditation effects may contribute in an integral and substantive way to a fuller understanding of human capacity for self-regulation, rather than simply being viewed as a way of documenting the value of an esoteric but useful therapeutic technique (Walsh & Shapiro, 2006).

CLINICAL EFFECTS OF MINDFULNESS MEDITATION: APPLICATION OF THE MULTIDOMAIN MODEL

Because meditation practice affects basic processes by which we encode and respond to meaning in our perceptual and internal experience, effects of meditation practice can appear across all areas of functioning. Based on contemporary psychological theory, clinical application, and research to date, the following six domains are posited as heuristically useful in framing meditation effects: cognitive, physiological, emotional, behavioral, relation to self, relation to others, and spiritual (Kristeller, 2004; see Figure 15.1). The order of the columns in Figure 15.1 is not arbitrary. Cognition is placed first, as both the primary mediating process and as an object of practice, in that thought content, ability to focus, and levels of awareness are all cognitive processes. Physiological effects are next; most clients, on first experiencing meditation, note how physically relaxing it feels. Emotional effects represent the next domain to be accessed, generally as positive experiences but occasionally as flooding by traumatic memories that may be uncovered. Behavioral change is somewhat more challenging and may benefit from guided meditation experience. Shifts in relation to self and to others proceed as experience with practice develops. Finally, cultivation of spiritual well-being and experience is a virtually universal goal of meditative practice, but how spirituality can be defined or cultivated is only beginning to be systematically investigated.

The dashed vertical lines in Figure 15.1 reflect that, although effects may develop within each domain, the domains interact with each other. The dashed horizontal line is intended to indicate that initial effects (below the line) are most likely to be experienced after relatively little practice, sometimes within the first introduction to meditation. The level above the line represents effects that follow with more extended practice; evidence suggests that there may be considerable individual variability in how readily such effects are experienced. Practice within a particular domain—for example, by using guided meditations—may cultivate more rapid growth within that domain. More advanced effects such as spiritual reawakening, as generally beyond the goals of therapeutic work, but are depicted in Figure 15.1 for heuristic purposes. One of the hallmarks of this level is the sustainability of effects, despite life challenges; the other is cultivation of certain exceptional capacities. Because the traditional literature on meditation is replete with references to extraordinary states of experience, insight, and spiritual enlightenment, it is not uncommon for beginning meditators to be confused about what to expect, leading either to anxiety or to unrealistic expectations. Fleeting experiences with unusual states of clarity, insight, or spiritual awareness may occur very early in practice for some, contributing to this confusion and possibly a lack of appreciation for more readily accessible effects.

Stage of Development	Advanced	Integration of Effects/Exceptional Capacities/Sustained Insight and Spiritual Wisdom					
	Intermediate	Altered states ↑ Attentional flexibility ↓ Ruminative thinking ↑ Mindfulness	Pain reduction ↑ Pain control Change in physiologic processes Breath control	↑ Sustained equanimity ↑ Positive emotion ↑ Engagement in the moment ↑ Anxiety/anger/depression	↑ Compassionate behavior ↓ Addictive behavior ↑ Adaptive behavior Deconditioning	Dissolving attachment to sense of self ↑ Connectedness to others ↑ Empathy Self-integration ↓ Narcissism	Altered states ↑ Mystical experiences Awareness of "transcendence" ↑ Compassion ↑ Unselfish love Heightened sense of inner peace/calm
	Initial	↑ Ability to focus ↑ Awareness of mind/thoughts	↑ Awareness of Breath ↑ Awareness of Body Relaxation Response	↓ Reactivity ↑ Awareness of emotional patterns	↑ Impulse control ↑ Awareness of behavior patterns	↑ Self-acceptance ↑ Sense of self	↑ Spiritual engagement ↑ Awe
Domain	Attentional/Cognitive	Physical	Emotional	Behavioral	Relation to Self/Others	Spiritual	

FIGURE 15.1. A multidomain model of meditation effects in stress management. The order of effects within the intermediate stage may vary considerably across individuals. The dashed lines between domains reflect that these domains interact with each other.

ASSESSMENT: MINDFULNESS MEDITATION AND EMPIRICAL EVIDENCE

The research and clinical literature supports a wide range of use of mindfulness meditation, and it is summarized here drawing on the multidomain model outlined above. Table 15.1 provides an overview of research in relation to demonstrated efficacy. However, the systematic investigation of mindfulness meditation is still at an early stage; even though well-designed randomized trials have been conducted, typically only one or two have been published to date that use a given population and symptom area, other than in regard to general adjustment or quality of life. Furthermore, the sample sizes in randomized studies have generally been small. At the same time, a formal meta-analysis of 20 mindfulness-based stress reduction studies (Grossman, Niemann, Schmidt, & Walach, 2004) showed consistent effect sizes of approximately 0.5 ($p < .0001$) across target areas. Whether mindfulness meditation is appropriate for particular individuals or is contraindicated for certain types of presenting issues remains to be investigated. Furthermore, virtually no studies have been conducted that compare the therapeutic impact of different types of meditation practice.

Meditation and Cognition

As noted earlier, meditation is fundamentally a cognitive process that involves learning to shift and focus the attention at will onto an object of choice, such as bodily feelings or an emotional experience, while disengaging from usual conditioned reactivity or elaborative processing. Mindfulness meditation also facilitates metacognitive processing, in which thoughts are observed as “just thoughts” (Bishop et al., 2004). One of the initial effects of meditation is acute awareness of the “monkey mind,” the continuous jumping of thought from one point to another; this is one of the metaphors often brought into contemporary usage from the classical texts (Bodhi, 2000). In mindfulness or insight meditation, cultivating “bare attention” may be one of the most powerful aspects of meditation practice for individuals whose conscious minds are habitually caught up in thoughts and in reactions to those thoughts. Unlike concentrative techniques, mindfulness meditation is not designed to “block out” conscious thinking but rather to cultivate the ability to relate to conscious awareness in a nonreactive way. Whereas concentrative approaches may be more effective in producing trance-like states, particularly with extended practice, mindfulness meditation may be more effective in cultivating an ability to maintain awareness of experience without engaging habitual reactions to such experience.

The mind is designed to construct meaning out of experience, and that constructed meaning is encapsulated by conscious thoughts (Mahoney, 2003). A central tenet of Buddhist psychology is that conditioned desires distort perception, create an illusionary sense of self, and, to the extent that conditioning produces craving and attachment, are the primary source of distress. It is well recognized that compulsions and obsessions such as those that occur in eating disorders or addictions are powerfully directed by constructed thoughts and conditioned reactions, which the individual experiences both as uncontrollable and as an integral aspect of “self.” Similar to some aspects of cognitive therapy, a goal is to disengage the identity of the “self” from the content of one’s thought (Kwee & Ellis, 1998). The recognition that mindfulness meditation practice can heighten objective self-awareness and disengage ruminative thinking patterns has been utilized effectively by Teasdale and his colleagues within Mindfulness-Based Cognitive Therapy (MBCT) (Segal, Williams, & Teasdale, 2002). Although the goal for that treatment is to ameliorate re-

TABLE 15.1. Outcome Research in Mindfulness Meditation

Target area/ condition	Representative studies	Design	Clinical significance	Level of evidence
<u>Cognitive</u>				
Thought disorders	Chadwick et al. (2005)	Pre-post (N = 11)	Exploratory	Possibly efficacious
Attention	Linden (1973) Semple et al. (2006)	Randomized	Suggestive	Possibly efficacious
ADHD	Hesslinger et al. (2002)	Single group (N = 8)	Suggestive	Possibly efficacious
<u>Physical</u>				
Chronic pain	Kabat-Zinn et al. (1985, 1987)	Large sample; extended follow-up	Adjustment to pain improved	Possibly efficacious
Fibromyalgia	Plews-Ogan et al. (2005) Goldenburg et al. (1994) Astin et al. (2003)	Randomized	Improved mood Mixed effects	Possibly efficacious
Psoriasis	Bernhard et al. (1988) Kabat-Zinn, Wheeler, et al. (1998)	Randomized Randomized	Clinically significant (N = 19)	Probably efficacious
Immune function	Davidson et al. (2003) Carlson et al. (2003)	Randomized	Mixed effects	Possibly efficacious
<u>Emotional</u>				
Depression—relapse prevention	Teasdale et al. (2000)	Randomized	Effects limited to those with 3 or more episodes of depression	Probably efficacious
Anxiety disorders	Kabat-Zinn et al. (1992) Miller et al. (1995) Kabat-Zinn, Chapman, & Salmon (1997)	Single group Extended baseline/follow- up (6 years)	Clinically significant	Probably efficacious
Emotional regulation	Kutz et al. (1985)	Single group	Clinically significant	Possibly efficacious
Mood—General	Multiple studies	See Grossman et al. (2004)	Clinically significant	Probably efficacious
Adjustment to illness	Multiple studies	See Grossman et al. (2004)	Clinically significant	Probably efficacious
Anger	Woolfolk (1984)	A-B-A design case study	Clinically significant	Possibly efficacious
<u>Behavioral</u>				
Eating disorders/ obesity	Kristeller & Hallett (1999)	Single group, extended baseline	Clinically significant	Probably efficacious
Alcohol and drug abuse/dependence	Kristeller et al. (2006) Marlatt et al. (in press)	Randomized Nonrandomized	Suggestive	Possibly efficacious

(continued)

TABLE 15.1. (continued)

Target area/ condition	Representative studies	Design	Clinical significance	Level of evidence
<u>Relationship to self/others</u>				
Personal growth	Lesh (1970)	Nonrandomized	Suggestive	Probably efficacious
	Shapiro et al. (2005)	Randomized		
	Weissbecker et al. (2002)			
Marital adjustment	Carson et al. (2004)	Randomized	Normal sample	Possibly efficacious
<u>Spiritual</u>				
Spiritual well-being	Carmody et al. (in press)	Anecdotal Single group	Normal samples	Possibly efficacious
	Shapiro, Schwartz, & Boumer (1998)	Randomized		

lapse in chronic depression (discussed below), the underlying rationale links cognitive therapy to cognitive science at a fundamental level. Teasdale (1999a) differentiates between metacognitive *knowledge* (*knowing* that thoughts are not always accurate reflections of reality) and metacognitive *insight* (*experiencing* thoughts as events, rather than as being necessarily reflective of reality). Teasdale further differentiates between the experience of thoughts and feelings as transient events in conscious awareness and the ability to engage a metacognitive perspective “to particular thoughts and feelings *as they are being processed*” (Teasdale, 1999b). In our work, we introduce a model of meditation practice in which the first step is heightening awareness of the “cluttering mind,” followed by awareness of usual and often automatic patterns of thoughts, habits, and emotions, and finally moving to experience of the “wise mind,” which emerges in the suspension of everyday preoccupations and activities.

Bach and Hayes (2002), in a large randomized study, have used mindful awareness and acceptance approaches, although without meditation per se, with psychiatric inpatients with active auditory and visual hallucinations and delusions and found significant decreases in the patients’ likelihood of interpreting these experiences as real, along with decreased rehospitalization. A study (Chadwick, Taylor, & Abba, 2005) on a small sample of patients ($N = 11$) with active psychosis found that group treatment that included training in mindful awareness of the breath and observing unpleasant experiences without judgment was well tolerated and led to significant improvement in psychotic thinking.

I observed similar responses in a young woman I saw in brief group treatment using various meditation techniques; she had had several hospitalizations for paranoid psychosis, although she was otherwise relatively highly functioning, was married, and worked in a responsible position. During treatment, she became aware that under stress she tended to construe even mild criticism, particularly at work, as very harsh; she would then ruminate on this and experience increasingly paranoid ideation. First, using a mantra meditation, she was able to disengage the emotional reactivity; she was then able to simply observe milder levels of negative thoughts rather than reacting to them, thereby interrupting the escalating course of paranoid ideation. Experiencing thoughts as “just” thoughts—that can be separated from the reactions they normally trigger and that need not be re-

sponded to—can be extremely powerful in returning a sense of control to the individual, regardless of the nature and content of the cognitions.

A distinct clinical application lies in the cultivation of sustained attention. The use of meditation-based interventions for training attentional processes in attention-deficit/hyperactivity disorder (ADHD) has only been explored to a limited degree (Arnold, 2001). A German study (Hesslinger et al., 2002) adapted Linehan's dialectical behavior therapy, including mindfulness exercises, to treat eight individuals with adult ADHD; pre-post effects were statistically significant. Research on nonclinical samples is also suggestive. An early study (Linden, 1973) showed increased field independence in third-grade children randomly assigned to a mindfulness-type meditation practice for 20-minute twice-weekly sessions over 18 weeks. Semple, Lee, and Miller (2006) summarize their recent work, including results of a randomized study with 9- to 12-year-olds who showed significant improvement on an attention measure. Lazar and her colleagues (Lazar et al., 2005) have shown thickening in parts of the right prefrontal cortex in experienced meditators, which they interpret as indicating heightened cognitive capacity.

Physiological and Health Effects

Even the most basic instruction in meditation techniques elicits a sense of physical relaxation for most people. Sitting quietly, letting the breath slow down, and disengaging the mind from active thinking generally leads to a sense of substantial relaxation. Meditation, through the process of disengaging reactive attention, appears to influence the balance between sympathetic arousal and parasympathetic relaxation, slowing heart rate (Cuthbert et al., 1981) and decreasing blood pressure (Benson, 1975). This shift is essentially the "relaxation response" and has been well documented, primarily through research on mantra-based meditation. Other peripheral physiological effects include changes in endocrine and immune system functioning (Davidson et al., 2003). There may also be primary physiological effects not mediated by attentional processes, such as shifts in physiological balance and increases in well-being that accompany slower, paced breathing (Grossman et al., 2004; Lehrer, 1983).

Effects of meditation on the central nervous system have also been a focus of research for many decades. Early studies (Glueck & Stroebel, 1975) primarily focused on changes in alpha and theta rhythm dominance during meditation practice. Recent work investigating synchronization of brain activity (Singer, 2001) is finding heightened signs of this during meditation in highly experienced meditators (Lutz et al., 2004). Brain imaging technology has allowed increasingly sophisticated work on changes in localization of brain activity during meditative practice, with intriguing evidence emerging regarding brain responses during spiritual experience in highly trained meditators (D'Aquili & Newburg, 1998). Lazar and colleagues (2005) found that the thickening of cortical structure in highly experienced meditators was correlated with slowing of respiration, both of which were related to years of meditation practice.

Health benefits have been a primary goal of the Mindfulness-Based Stress Reduction (MBSR) program developed by Kabat-Zinn (1990) and now available across the country and around the world. Benefits to chronic pain patients have been documented both short term and long term (Kabat-Zinn, Lipworth, & Burney, 1985; Kabat-Zinn, Lipworth, Burney, & Sellers, 1986) in nonrandomized samples, although others have found a lack of impact on pain experience with chronic pain patients in comparison with massage therapy (Plews-Ogan, Owens, Goodman, Wolfe, & Schorling, 2005). A randomized clinical trial (Goldenberg et al., 1994) of patients with fibromyalgia found greater

improvement symptoms in patients enrolled in a 10-week meditation-based program as compared with controls, but Astin and his colleagues (Astin et al., 2003) failed to find differential effects using an education control group. In patients with psoriasis, a disease that involves immune system dysregulation and overproliferation of cell growth resulting in scaly, itchy patches of skin, guided mindfulness meditation, delivered by tape recorder, has proved highly effective as an adjunctive treatment (Bernhard, Kristeller, & Kabat-Zinn, 1988; Kabat-Zinn, Wheeler, et al., 1998), significantly improving the rate of clearing.

MBSR may also improve immune function in cancer patients, although evidence is still limited (Specia, Carlson, Mackenzie, & Angen, 2006). Carlson and her colleagues (Carlson, Specia, Patel, & Goodey, 2003) found that several indicators of immune response improved in breast and prostate cancer patients, with interleukin (IL)-4 increasing threefold. They also found, in the same study, improved diurnal profiles in salivary cortisol, which has also been associated with survival time. Other research by this group (Carlson et al., 2004) has found improvement in sleep quality and duration, a common concern among cancer patients.

Meditation and Emotion

Improvement in mood, anxiety, and general well-being has been documented in a wide range of individuals enrolled in MBSR and in other mindfulness-based practices. Much of the value of using meditation-based interventions with medical patients lies in relieving emotional distress related to the challenges of treatment and natural fears of disability or mortality (e.g., Reibel, Greeson, Brainard, & Rosenzweig, 2001; Sagula & Rice, 2004; Tacon, McComb, Caldera, & Randolph, 2003). Mindfulness meditation may be particularly powerful for patients dealing with cancer (Kabat-Zinn, Massion, et al., 1998; Rosenbaum & Rosenbaum, 2005; Specia, Carlson, Goodey, & Angen, 2000). Mindfulness meditation is also documented to contribute to better coping in individuals in high-stress work environments, such as medical students (Rosenzweig, Reibel, Greeson, Brainard, & Hajat, 2003; Shapiro, Schwartz, & Bonner, 1998) or business executives (Davidson et al., 2003), and community members enrolled in a wellness program (Williams, Kolar, Reger, & Pearson, 2001). Meditation can be considered one of the few tools for systematic cultivation of emotional equanimity, an advanced level of stress and affect tolerance (Walsh & Shapiro, 2006), although even beginner meditators may experience decreased reactivity and growing ability to “let things be.” Cultivation of positive emotion may be a distinct process that has played a central role in Tibetan Buddhism (Ricard, 2006). Davidson has been able to document that meditation practice enhances activity in areas of the left prefrontal cortex that underlie positive emotion, to a limited degree in novice meditators (Davidson et al., 2003) and to a striking amount in highly adept (> 10,000 hours of meditation practice) Buddhist monks and other practitioners (Goleman, 2003).

Within the psychiatric setting, mindfulness techniques, including brief meditation practice, play a central role in dialectical behavior therapy in treating the emotionally chaotic inner lives of individuals diagnosed with borderline personality disorder and related disorders (Linehan, 1993a; Lynch & Bronner, 2006; Welch, Rizvi, & Dimidjian, 2006). Meditation practice may be particularly powerful in the treatment of anxiety disorders. Kabat-Zinn and his associates (1992) demonstrated the effectiveness of an 8-week mindfulness meditation program in significantly lowering anxiety, panic symptoms, and general dysphoria of individuals with documented anxiety disorders, benefits that re-

mained 3 years later (Miller, Fletcher, & Kabat-Zinn, 1995). The effects appeared to be particularly enduring for those with panic attacks and agoraphobia, declining gradually for those with generalized anxiety disorder (Carmody, personal communication, July 2004). A second study (Kabat-Zinn, Chapman, & Salmon, 1997) documented substantial decreases in both cognitive and somatic anxiety following MBSR treatment.

The MBCT program (Teasdale, Segal, & Williams, 2003; Teasdale et al., 2000), an adaptation of MBSR for treating major depression, has been shown to be effective by Teasdale and his colleagues (Ma & Teasdale, 2004; Teasdale et al., 2000) in randomized clinical trials for substantially reduced relapse in individuals with a history of three or more episodes of major clinical depression. Mindfulness meditation appears to interrupt cascades of negative thinking that otherwise contribute to psychobiological dysregulation and relapse into major depression.

One of the most systematic evaluations of a mindfulness-based intervention as an adjunct to psychotherapy was done by Kutz and his colleagues (Kutz, 1985; Kutz, Borysenko, & Benson, 1985). Twenty patients, who had been in individual psychodynamic-exploratory therapy for an average of about 4 years, participated in adjunctive treatment largely modeled after the MBSR program. Participants improved significantly on most subscales of the Symptom Checklist 90 (SCL-90) and on the Profile of Mood States (POMS). Ratings by the primary therapists identified substantial change in most patients on anxiety and anxiety tolerance, optimism about the future, and overall enjoyment of life. Of participants, 80% indicated that the daily meditation experience was the most valuable part of the intervention; in particular, they noted using meditation practice to cultivate a sense of relaxation that generalized to other aspects of their lives.

Anger management may be particularly well suited to mindfulness meditation approaches in that awareness, acceptance, and the ability to suspend immediate reaction are core to disengaging anger responses. Woolfolk (1984) used a single-case reversal design to assess meditation training in a 26-year-old construction worker with substantial problems in managing anger. The client had lost several jobs, and his long-term relationship was at risk. The client was trained to use mantra meditation, separately and in combination with brief Zen-based mindful-awareness meditations, at times he identified as typical precursors to his angry outbursts during a 4-week active intervention period. The results were clear: It was only the combination of meditations, rather than the mantra meditation alone, that affected experience and expression of anger. Improvement in both client ratings and those of others was maintained at 3 months. This case is notable for several reasons: It illustrates the value of single-case design for investigating meditation practice, it shows how readily meditation techniques can be learned in the face of a clinically meaningful problem, and it distinguishes the effects of different types of practice. Bankart (2006) elaborates a wide range of mindfulness exercises related to anger management, most based on guided meditation practice, that he integrates with basic cognitive behavioral approaches within a broader framework of Buddhist psychology. His book, written for the layperson, would be an excellent accompaniment to anger-management therapy.

Meditation and Behavior

Improved behavioral regulation in response to meditation practice may be the result of several factors: improving emotional regulation, slowing the chain of behavioral reactions as awareness is cultivated, increasing receptivity to behavioral and lifestyle recommendations, or learning to tolerate and “ride out” waves of craving rather than respond impulsively (Breslin, Zack, & McMMain, 2002; Marlatt & Kristeller, 1999). Initial effects

include increased awareness of behavioral patterns, followed by decreases in impulsive and compulsive behavior. There may be a sense of a general “deconditioning,” of being somehow “freed” from the power of earlier patterns of avoidance or compulsions. This sense of freedom may be accompanied by increases in purposeful, focused or “wise” action. The degree to which behavioral changes occur spontaneously as a function of meditation practice is not clear; for behavioral change to occur, the meditation may need to focus on the behavioral goals explicitly.

Eating behavior and food choices appear particularly responsive to mindfulness practice. A nonrandomized explorative study of men who had been treated for prostate cancer (the Stanford Group; Saxe et al., 2001) successfully combined the MBSR program with a 4-month nutritional education program. Overall diet and weight improved, along with prostate specific antigens (PSA). A number of eating-disorder and weight-control programs are beginning to incorporate meditation and mindfulness components (Kristeller, Baer, & Quillian-Wolever, 2006). In our Mindfulness-Based Eating Awareness Treatment (MB-EAT) program for binge eaters (Kristeller, Hallett, & Wolever, 2003; Kristeller & Hallett, 1999), we begin to train the skills of mindful eating immediately, first by having participants eat a single raisin mindfully, an exercise adopted from the MBSR program, and then by using more complex and challenging foods in later sessions, including a buffet meal. There are also guided meditations on awareness of hunger, satiety, and emotional eating. After only a few weeks of practice, participants in the MB-EAT program report increased awareness of habitual triggers for overeating and experience an increasing ability to sustain moments of detached observation, realizing that they do not need to respond to every impulse that arises. The MB-EAT intervention showed comparable effects to a psychoeducational intervention in decreasing bingeing, but with greater improvement on measures of internalization of change. The degree of improvement, including weight loss, was directly related to the amount of meditation practice reported (Kristeller, Wolever, & Sheets, 2007).

Some studies have shown a reduction in drug and alcohol use among prisoners as a result of practicing Vipassana meditation. A recent study by Marlatt and his associates (2004; Bowen et al., 2006) examined the effectiveness of a 10-day traditional Vipassana retreat, as created by Goenka (Hart, 1987), on drug relapse and recidivism in men and women incarcerated at the North Rehabilitation Facility (NRF), a short-term minimum-security jail in the Seattle area. Individuals who volunteered for the Vipassana retreat and who were available at 3-month follow-up ($N = 57$) were compared with those who chose not to participate ($N = 116$). The Vipassana course participants were significantly more likely to have decreased their reported marijuana, crack cocaine, and alcohol use, and few reported any worsening of problems, unlike the comparison group. The participants also showed improvement on impulse control, psychiatric symptoms, optimism, and locus of control relative to the comparison group. Investigations on the effects of mindfulness meditation on smoking cessation are currently under way; given the role of paced inhalation, the compelling nature of craving for nicotine, and the highly conditioned associations with smoking, this application seems particularly suitable.

Improved Self-Acceptance and Relation to Others

Harsh self-judgment is a chronic source of stress, and lack of social connectedness is increasingly recognized as contributing to poor adjustment. A traditional goal of mindfulness meditation is to improve self-concept and self-acceptance. Although this outcome is generally associated with advanced levels of practice, Shapiro and colleagues (Shapiro,

Astin, Bishop, & Cordova, 2005) found a consistent improvement in self-compassion in eight health professionals enrolled in an MBSR program, a change that was also related to improvement in perceived stress. A large study (Weissbecker et al., 2002) of women with fibromyalgia also found that sense of coherence (finding life meaningful and manageable) improved significantly after participation in an MBSR program.

Walsh and Shapiro (2006) suggest that a core process in meditation is *disidentification*, in which experiences can be observed without investing them with a sense of self. Disidentification might be considered a subtype of the process of disengagement referred to earlier, specific to neuroprocesses related to self-identity. Suspending this identification of self with either positive or negative experience promotes self-growth and may allow engagement of inner sources of strength and higher capacities. Such processes may also be involved in the transformative experiences that occur following the intensive 1-week retreats being offered in prison environments, as noted earlier, or may be evident in individuals with severe levels of personality disorder and psychopathology when mindfulness practice is taught in the context of ongoing psychotherapy (Segall, 2005).

Easterlin and Cardena (1998) found that more experienced meditators in the Vipassana tradition reported a higher sense of "self-acceptance" when under stress than did less experienced meditators. Haimerl and Valentine (2001) drew on Cloninger's theory of self-concept (Cloninger, Svrakic, & Przybeck, 1993) and investigated the relationship between amount of meditation practice (prospective meditators vs. those with less than 2 years' practice vs. greater than 2 years) and a measure of personality that taps into three dimensions: intrapersonal (e.g., self-acceptance vs. self-striving), interpersonal (e.g., empathy vs. social disinterest), and transpersonal (transpersonal identification vs. self-isolation and spiritual acceptance vs. rational materialism) development. Each dimension improved with practice, with the linear effect clearest for the intrapersonal and transpersonal dimensions. For interpersonal growth, increases appeared only after 2 years of practice.

Lesh (1970) explored the effect of 4 weeks of Zazen training on development of empathy in 16 master's-level student therapists compared to a waiting-list nonrandomized comparison group and to a group of students with no interest in the meditation. Only the Zazen group showed increases in empathy, but the changes were not related to their index of meditation experience. This study was hampered by lack of randomization and a small sample size, but it suggests relatively rapid effects and possible value within the therapy training environment. Carson and his colleagues (Carson, Carson, Gil, & Baucom, 2004), in a randomized intervention study, found that a loving kindness meditation therapy program improved relationships between married couples, even when the quality of the relationship was already high.

Tibetan practices (Davidson & Harrington, 2002; Wallace, 2006) incorporate a strong focus on cultivation of compassion, both for others and for the self. Kornfield (1993) has written eloquently of meditation as a path to loving kindness and to opening the heart, as has Sharon Salzberg (1999). Thich Nhat Hanh's brief meditations on loving kindness (Hanh, 1997) are particularly powerful and easily incorporated into psychotherapy. A paradox of meditation practice is how an apparently inner-focused and even self-preoccupied undertaking can cultivate empathic and altruistic orientation (Engler, 1998); the answer may lie within the process of decreasing self-protective reactivity but may also be a function of guided meditations that access and cultivate caring for others (Kristeller & Johnson, 2005). This aspect of meditation practice links to spiritual experience and is widely recognized as such within religious traditions. Yet because individuals who do not consider themselves spiritually inclined may still claim a deep sense of compassion, it can be placed within both domains in the current model.

Meditation and Spiritual Well-Being

Spiritual well-being has, until relatively recently, received little attention within the context of stress management, but it is increasingly being recognized as an important component of optimal coping (Kristeller, Rhodes, Cripe, & Sheets, 2006; Pargament, 1997) in the face of significant life stressors, such as cancer (Peterman, Fitchett, Brady, Hernandez, & Cella, 2002). Traditionally, meditation practices have developed as part of religious training, and spiritual growth is an explicit goal of virtually all meditative traditions (Walsh, 1999b). Spiritual effects cover a wide range of experiences, but there is little agreement as to whether relatively accessible experiences such as a general sense of inner peace or transcendence share underlying psychoneurological mechanisms with altered states or mystical experiences often associated with meditative experience. For the novice meditator, such experiences may occur on occasion, and may be profound, frightening, or puzzling, depending partly on the cultural context in which they occur. Despite the long-standing association between meditation and cultivation of spiritual experience, most contemporary research on meditation, at least in the United States, has attempted to secularize meditation practice. However, as attention to spirituality as an appropriate and meaningful focus for therapeutic engagement has been growing (Marlatt & Kristeller, 1999; Sperry, 2001), research is beginning to document effects of meditation and related practice on spiritual well-being, even within secular programs. For example, a large questionnaire study (Cox, 2000) found that meditation and contemplative prayer were related to greater well-being in comparison with other types of prayers. A recent randomized study (Shapiro et al., 1998) with medical and premedical students showed substantial and consistent changes across all measures of well-being, including increased spirituality, in those participating in a 7-week mindfulness meditation program, as did a randomized MBSR study (Astin, 1997) with undergraduates. Similar effects have been documented with medical populations, with improvement in a sense of meaning and peace highly related to improvement in physical well-being (Carmody, Reed, Kristeller, & Merriam, in press).

MEASUREMENT OF MINDFULNESS MEDITATION

Approaches to assessing the use of mindfulness meditation in therapy have focused primarily on four aspects: (1) use of different aspects of meditation (i.e., sitting meditation vs. walking meditation); (2) the quality of experience during practice; (3) the construct of mindfulness in everyday life; and (4) general or specific therapeutic impact. When using meditation practice with a client, it is important to assess how much sitting meditation the individual is actually doing during the week, their experiences of it, and problems that may be arising. This can be done informally or by using a simple self-monitoring scale that can be modified to suit the needs of the individual client. I use one that has five columns: time of day, type of practice (e.g., sitting vs. mini-meditation), length of practice, benefits, and problems that arose.

The Toronto Mindfulness Scale (TMS; Bishop et al., 2004) is designed for use immediately after a sitting, whether in a group or individually, to assess the quality of experience during the meditation itself. The TMS was developed by a group of therapists and meditation instructors to reflect those experiences that they felt best reflected high qualities of practice. The Freiburg Mindfulness Inventory (Walach, Buchheld, & Buttenmüller, 2006) was also designed for use with experienced meditators and assesses nonjudgmental present-moment observation and openness to negative experience; items include "I watch

my feelings without becoming lost in them” and “I am open to the experience of the present moment,” but it can be used independently from meditation practice to measure mindfulness (Leigh, Bowen, & Marlatt, 2005).

Several other scales have been developed to tap into mindfulness during daily activities. These include the Mindful Attention Awareness Scale (MAAS) (Brown & Ryan, 2004; Brown & Ryan, 2003) that assesses experiences of acting on automatic pilot, being preoccupied, and not paying attention to the present moment; the Cognitive and Affective Mindfulness Scale (CAMS) (Hayes & Feldman, 2004; Feldman, Hayes, Kumar, Greeson, & Larenceau, in press) designed to measure attention, awareness, present focus, and acceptance/nonjudgment; and the Mindfulness Questionnaire (Chadwick, Mead, & Lilley, 2004), which assesses a mindful approach to distressing thoughts and images. Finally, the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004) was designed to measure four elements of mindfulness: observing, describing experience, acting with awareness, and accepting without judgment. A factor analytic study (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006) administered these scales (except for the TMS), identifying five factors: Nonreactivity, Observing, Acting with Awareness, Describing, and Nonjudging. Baer's final 39-item Five-Factor Mindfulness Questionnaire draws from all scales, which load somewhat differentially on separate factors. In an assessment of criterion validity, Nonreactivity, Acting with Awareness, and Nonjudging were most associated with indicators of psychological well-being. A limitation of this research is that it was conducted on undergraduates with little or no meditation experience; further work is being done to assess the value of these scales as measures of meditation practice effects, both in the general and clinical populations.

THE METHOD: BASIC ELEMENTS OF MINDFULNESS MEDITATION

Innumerable meditation techniques exist, as developed not only within the Buddhist traditions but also within other contemplative traditions, including Hinduism, Christianity, and Judaism. However mindfulness practices, as generally used in the therapeutic context in the United States, can be divided into three aspects: breath awareness, open-focus mindfulness techniques, and guided mindfulness meditation practices.

Breath Awareness

Vipassana practice, or insight meditation, the Southeast Asian school of mindfulness meditation popularized by Kornfield, Salzberg, and others, often uses a focus on the breath as a way to both cultivate and reengage the attention when it becomes caught up with analytical thinking. This use of the breath is arguably the element of mindfulness meditation that most overlaps with concentrative techniques. The breath is a particularly potent focus of attention, in that it is always present, is highly sensitive to stress reactions, and is inherently rhythmic in nature. Learning to shift one's attention to the breath mindfully at times of stress may not only serve to disengage reactivity but may also cultivate a positive physiological feedback system that brings sympathetic and parasympathetic responses into better balance. Training the mind to hold attention on the breath is an important element of mindfulness traditions, yet unlike the concentrative use of the mantra, emphasis is generally placed on cultivating awareness of the complexity and richness of something as simple as the process of breathing (Hanh, 1996). See Table 15.2 for brief instructions in breath awareness meditation. Purposefully slowing the breath is an aspect of several meditation traditions, including Zen Rinzai practice (Lehrer, Sasaki, & Saito,

1999) and Tibetan practices. Slowing the breath has been shown to reliably produce unconditioned relaxation effects (Lehrer & Woolfolk, 1994); very low respiration rates (2–6 cycles/minute) trigger powerful relaxation effects and raise body temperature substantially (Benson, 1982; Lehrer et al., 1999).

Open Awareness

Open awareness is generally considered the core of mindfulness meditation. Table 15.2 contains elements of open awareness, although with instructions to bring awareness back to the breath frequently as an anchor. As noted earlier, cultivating “bare hovering attention” has several goals: (1) to bring awareness to experience both in the body and the mind; (2) to disengage the reactive and analytical mind, in regard to both behavioral impulses and to tendencies to “think about” content of thought rather than simply observing it; (3) to train the ability to engage mindfulness more easily and fully during daily activities. In open awareness, one gently rests attention on whatever has risen to the realm of consciousness; as that fades, one moves one’s attention to the next object of awareness. A useful teaching metaphor is to imagine oneself sitting on the banks of a river and observing what comes floating by: leaves, branches, perhaps a piece of trash. Our usual analytical way of observing might

TABLE 15.2. Basic Instructions in Breath Awareness and Mindfulness Meditation

1. Find a quiet place and time. If you prefer, set a timer for 20 to 40 minutes. Become comfortable in your chair, sitting with a relaxed but straight, erect posture that is balanced but not straining. Allow your hands to rest comfortably in your lap. Loosen any tight clothing that will restrict your stomach. Gently close your eyes.
2. Simply allow your body to become still. Allow your shoulders, chest, and stomach to relax. Focus your attention on the feeling of your breathing. Begin by taking two or three deeper breaths from your diaphragm, letting the air flow all the way into your stomach, without any push or strain, and then flow gently back out again. Repeat these two or three deep breaths, noticing an increased sense of calm and relaxation as you breath in the clean, fresh air and breath out any sense of tension or stress.
3. Now let your breathing find its own natural, comfortable rhythm and depth. Focus your attention on the feeling of your breath as it comes in at the tip of your nose, moves through the back of your throat, into your lower diaphragm, and back out again, letting your stomach rise and fall naturally with each breath.
4. Allow your attention to stay focused on your breath and away from the noise, the thoughts, the feelings, the concerns that may usually fill your mind.
5. As you continue, you will notice that the mind will become caught up in thoughts and feelings. It may become attached to noises or bodily sensations. You may find yourself remembering something from your past or thinking about the future. This is to be expected. This is the nature of the mind. If the thought or experience is particularly powerful, without self-judgment, simply observe the process of the mind. You might note to yourself the nature of the thought or experience: “worry,” “planning,” “pain,” “sound.” Then gently return your attention to the breath.
6. And again, as you notice your mind wandering off, do not be critical of yourself. Understand that this is the nature of the mind—to become attached to daily concerns, to become attached to feelings, memories. If you find your mind becoming preoccupied with a thought, simply notice it, rather than pursuing it at this moment. Understand, without judging, that it is the habit of your mind to pursue the thought. When you notice this happening, simply return your attention to your breathing. See the thought as simply a thought, an activity that your mind is engaging in.
7. When you are ready, gently bring your attention back just to the breath. Now bring your attention back into the space of your body and into the space of the room. Move around gently in the space of the chair. When you are ready, open your eyes and gently stretch out.

be to think about, analyze, or judge each object—“What type of leaf is that? . . . Where did it fall into the river? . . . When did that branch fall in? . . . When will it sink? . . . Oh, who threw that trash in? . . . Isn't that terrible.” In contrast, mindfulness involves simply observing: “leaf . . . branch . . . trash . . .” without letting the mind be carried along. A more contemporary metaphor, offered by one of my clients, is the difference between “mall walking” for exercise and window shopping. When window shopping in the mall, one may stop to chat with friends or enter a store to browse. When mall walking, stopping to do these things would defeat the purpose of steadily moving for exercise, but one might still acknowledge friends or make a mental “note” of something displayed in a store window to return to later. This type of “noting” is often used during mindfulness practice, particularly when first learning to meditate—silently naming the type of thought or experience one is having, such as “analyzing,” “pain,” “desire to move,” or “impatience”—and then moving back to the breath or to bare attention, without following the thought or experience further. This technique helps train attention to be aware of, rather than “grab” onto, the content of a thought. Many individuals find mindfulness training very powerful because they are not aware that they have this capacity simply to observe, rather than to analyze or judge. “Noting” is also useful when some type of insight has arisen; by making a mental note of it and reminding oneself that if it is important, it is more likely to be recalled later, without interrupting the sitting to pursue it.

Guided Awareness

In guided meditation practice, the content carries significance and is intended to engage a particular aspect of self but in a mindful, rather than analytical or judgmental, way. In traditional meditation practices, the focus may be a particular chant, the symbolic *mandala* of Tibetan tantric practices, a Zen *koan*, complex universal experiences such as images of death or suffering, or feelings of compassion (as in loving kindness meditations). In contemporary therapeutic practice, the focus may be on physical sensations such as hunger (Kristeller, Baer, & Quillian-Wolever, 2006) or stress (Kabat-Zinn et al., 1992), on depressive thoughts (Segal, Williams, & Teasdale, 2002), or on interpersonal connectedness (Carson et al., 2004), with the goal of first increasing awareness in relation to the targeted issue and then modifying the nature of cognitive, behavioral, or emotional response and reactivity to these experiences. Guided meditations can be incorporated into therapeutic approaches in many ways, whether as elements of general mindfulness practice, such as occurs in the MBSR program in relation to symptoms such as pain or anxiety or as fully “scripted” meditations. Such scripted meditations may be as brief as a loving kindness meditation or as structured as the instructions used in the treatment meditation tapes for psoriasis (Bernhard et al., 1988; Kabat-Zinn, Wheeler, et al., 1998), or they may make up a substantial part of an entire treatment program, such as for depression in the MBCT program (Segal et al., 2002) or aspects of eating in the MB-EAT program (Kristeller et al., 2003). Guided meditation may also form an important aspect of mindfulness approaches in individual therapy, as in treatments described by Emmons and Emmons (2000), Rubin (1996a), or in couples work (Carson et al., 2004; Surrey, 2005).

The question is sometimes raised how such focused or guided meditations differ from imagery work or hypnosis. There is, of course, overlap (Holroyd, 2003; Otani, 2003) in the use of focused attention and disengagement of usual thought processes. The distinctions are nevertheless evident: Hypnosis more generally cultivates mental processing of images and experience, both spontaneous and suggested, whereas mindfulness practice cultivates “bare awareness.” Furthermore, mindfulness emphasizes awareness of internal experience that the individual discovers for him- or herself. In my experience, in-

dividuals often experience hypnosis as something that is “done to them,” whereas mindfulness meditation cultivates a greater sense of internalization of awareness and self-control. However, there has been long-standing interest in combining these approaches clinically (Brown, Forte, Rich, & Epstein, 1982; Brown & Fromm, 1988); for example, Marriott (1989) describes brief treatment of a woman with panic attacks in which hypnotic induction and guided meditation were used jointly to deepen access and processing of memories and trauma.

It is also useful to consider body-focused practices as a distinct type of guided or targeted meditation. The word *yoga* comes from the Sanskrit term *yuj*, meaning “to yoke,” as in yoking the mind and body (Budilovsky & Adamson, 2002). Most meditative traditions recommend use of particular body postures to facilitate practice. Other body practices include walking meditation, body scanning, and guided meditations on the senses or interoceptive experience. From a therapeutic perspective, the type and degree of emphasis on body work should be adjusted to therapeutic goals and the needs (or limitations) of a particular client or population.

Length of Practice

Formal mindfulness meditation practice, similar to concentrative meditation, involves putting aside a certain length of time, such as 20 or 40 minutes, once or twice per day. Daily practice is emphasized as a way of training the mind most effectively to shift into a mindful state. Shorter periods of time, such as 5–10 minutes, may be helpful in teaching children meditation (Fontana & Slack, 1997; Rozman, 1994) or in using meditation in special settings, but it may not allow the mind enough time to shift into an absorptive state, particularly early in practice. At the same time, gradual integration of the meditative experience through moment-to-moment awareness in daily life, whether by training the mind to be focused or to remain mindful and nonreactive, is the goal of all practice. Such “mini-meditations” (Carrington, 1998), whether of 3–5 minutes’ or 3–5 seconds’ duration, may become a very powerful part of practice.

When integrating meditation into daily activities, a person may be instructed to shift attention to the breath or to simply stop and attend mindfully to whatever he or she is doing. One effective way to use “mini-meditations” is with a regularly occurring signal, such as a clock chiming or the telephone ringing, to bring oneself into a moment of mindful awareness rather than responding reactively or being on “automatic.” In our MB-EAT program, we emphasize using mini-meditations just before meals or while eating to facilitate bringing mindful awareness to the food, counteracting “automatic eating.” A client of mine was struggling with almost incapacitating anger and anxiety in her work environment. She had practiced TM but had a difficult time using her mantra in daily activities without “zoning out,” as she put it. After a weekend retreat spent learning mindfulness meditation and further work in individual treatment, we discussed how to use “mini-meditations” in her work setting. She stuck small red dots in various places in her office (her computer monitor, on the side of the door, on her telephone, etc.) as reminders to attend to her experience and then if she was feeling agitated to shift her attention briefly to her breath. She returned the next week noting that this had been very helpful—and that she had also imagined sticking a red dot on the forehead of the person whom she found most difficult to work with.

Far more intensive training in a retreat environment is an aspect of virtually all meditative traditions. Such retreats may last from several days to several months. Such experiences are understood to be particularly valuable for more complete control over various aspects of mind and body and as a path of entry into what could be considered altered

states or spiritual enlightenment (Austin, 1998; Dass, 1987; Welwood, 2000). Such retreats may serve as a complement to therapeutic work and will generally be supervised by a highly experienced meditation teacher.

GROUP PROGRAMS

Mindfulness-Based Stress Reduction

Perhaps the best known and most fully researched mindfulness approach is the MBSR group program developed by Jon Kabat-Zinn (Kabat-Zinn, 1990). The basic structure includes eight weekly sessions of 2½–3 hours each, with a full-day (7½ hours) silent retreat after session 6. Typically, about 25 individuals attend, and group sharing is an important aspect of the program. Participants are first taught breath awareness and body scan meditations and then continue with formal sitting mindfulness meditation. Yoga is introduced in session 3 and walking meditation by session 4. Participants are provided with audiotapes of 45 minutes in length and are expected to practice once per day. Substantial didactic material is provided on stress management and managing a healthy lifestyle. Although the program is informed by Buddhist practice, presentation of material is strictly secular. Individual or group orientation sessions occur prior to the program; assessment includes medical and psychiatric symptom checklists. Elevated responses are noted, but individuals are rarely screened out based on their responses. It is not uncommon for individuals to experience highly charged emotional responses during the program, but rarely (less than 1%) are these at a level that require withdrawal from the program (Kabat-Zinn, personal communication, June 2004). A structured program for training and certification of MBSR leaders is available through the Center for Mindfulness (www.umassmed.edu/cfm).

Other Group Therapeutic Programs

Mindfulness-Based Cognitive Therapy (MBCT) adapts the MBSR program specifically to address the downward spiral of negative thinking and emotion that contribute to relapse in clinical depression (Segal et al., 2002; Teasdale et al., 1995). MBCT is structured in a very similar way to MBSR; the first few sessions are almost identical, with gradual engagement of awareness of mood states. Sessions 4 to 6 introduce the importance of observing negative automatic thoughts, cultivating acceptance, and seeing thoughts as “just thoughts.” The last two sessions focus on engaging in positive self-care, creating mastery, and relapse prevention. Development of Mindfulness-Based Relapse Prevention for drug and alcohol treatment is underway (Witkeiwitz, Marlatt, & Walker, 2005).

Mindfulness-Based Eating Awareness Therapy (MB-EAT) diverges somewhat further from the MBSR program in that a more substantial portion of the sessions use guided meditations that focus explicitly on cultivating awareness of hunger signals, satiety signals, and triggers for eating. In addition to guided meditations focused on eating behavior and emotional triggers for overeating, other meditation practices include the body scan, chair yoga, and walking meditation to increase comfort with the body, and forgiveness meditation and wisdom meditation to address negative self-judgment and to heighten a sense of meaning and purpose. Weekly sitting meditation tapes use 20-minute sessions. The number of sessions has been expanded from seven (Kristeller & Hallett, 1999) to nine (Kristeller, Baer, & Quillian-Wolever, 2006); a version under current evaluation adds more focus on weight loss across 10 weekly sessions, with 2 monthly follow-up meetings.

A very traditional form of Vipassana meditation is gaining more attention within the United States. The program, which follows a traditional 10-day retreat model, was developed by Goenka, a Burmese businessman who became a highly regarded lay leader in India of Vipassana retreats about 20 years ago (Hart, 1987). In this program, silence is maintained for the entire period, except for instruction, with approximately 10 hours per day spent in meditation. For the first 3 days, the focus is on breath awareness. This shifts to mindful observation of physical and mental experiences during the remaining days. Each evening a videotaped discourse by Goenka presents a secular Buddhist perspective on suffering and stress and on the value of meditative practice. This 10-day program has been used extensively in prisons in India; the transformative impact on participants is documented in the film *Doing Time, Doing Vipassana* (Menahemi & Ariel, 1997). The program has been evaluated in the U.S. prison system for preventing drug and alcohol relapse following release (Bowen et al., 2006).

INDIVIDUAL THERAPY AND MINDFULNESS MEDITATION

Integrating mindfulness meditation practice into individual therapy has been discussed by a number of practitioners, although with little empirical investigation. There is an increasing number of very valuable accounts of the use of mindfulness-based meditation within psychotherapeutic contexts from the perspective of both Theravadan mindfulness practice (e.g., Brach, 2003; Walsh, 2004) and Zen practice (Epstein, 1995, 2001; Mruk & Hartzell, 2003; Rosenbaum, 1998; Rubin, 1996). Integration can range from using meditation as a primary component of individual treatment, taught within the therapeutic setting, to drawing on clients' own personal meditation practice experience to complement and facilitate more traditional psychotherapy.

Emmons and Emmons (Emmons, 1978; Emmons & Emmons, 2000) have developed a technique that they call Meditative Therapy (MT), which they describe as "a synthesis between meditation and inner-oriented psychotherapy." In MT the therapy session is used as a meditative space; the client, with eyes closed and in a relaxed posture, is directed by the therapist to verbalize everything that comes to mind, regardless of content. Emmons compares this to a verbalized mindfulness meditation practice. However, unlike most meditative approaches, there is no home or individual practice, no use of the breath as a focus, and no training in formal meditation practice. The instruction focuses on directing the client to be aware of inner experiences: "... close your eyes and allow your awareness to shift inward. ... Now allow yourself to ask for help from your Inner Source." Although a light trance state may occur, this is not the intention of the process, unlike in hypnosis. Emmons recommends use of MT as a component of more extended therapeutic work, ranging from traditional insight-oriented therapy to cognitive-behavioral techniques.

USE OF MINDFULNESS MEDITATION: OTHER CLINICAL AND PRACTICAL ISSUES

How to deliver mindfulness meditation instruction most effectively in the therapeutic environment is a key question, both in terms of clinical impact and in regard to patient receptivity, patient burden, and cost. Mindfulness meditation practice is more complex than is concentrative meditation in that there is no single focus, such as a mantra. For

therapeutic value, most of the approaches either make use of group multisession programs or incorporate practice into ongoing psychotherapy. Taped programs (e.g., Salzberg & Goldstein, 2002) are also available for home use; other creative adaptations include the psoriasis treatment program developed by Jon Kabat-Zinn that delivered all instructions on brief audiotapes during medically standard phototherapy sessions.

Preference for Types of Practice

Individuals may have a preference for different types of practice. A group of MBSR participants ($N = 135$) were asked to rate different aspects of the program (sitting meditation, body scan, and yoga) on a 1–100 visual analogue scale (Kabat-Zinn, Chapman, & Salmon, 1997). Although average scores did not differ much (sitting meditation: 64.5 [$SD = 29.4$]; body scan: 56.4 [$SD = 33.1$]; yoga: 62.4 [$SD = 30.1$]), there was considerable variability, with 44% of participants reporting at least a 20-point difference in preference between types of practice. This study also sought to confirm the hypothesis that differences in preference relate to underlying patterns of experiencing anxiety in that individuals higher in somatic anxiety prefer body-based interventions, whereas those with higher cognitive anxiety prefer more cognitive interventions, such as sitting meditation (Davidson, Goleman, & Schwartz, 1976; Schwartz, Davidson, & Goleman, 1978). Contrary to previous results, the opposite was found: Individuals high on cognitive anxiety and low on somatic anxiety ($n = 9$) had a stronger preference for hatha yoga practice (sitting meditation: 44.6; body scan: 55.8; yoga: 72.7), whereas the low cognitive anxiety–high somatic anxiety participants ($n = 20$) showed the opposite (sitting meditation: 72.5; body scan: 66.0; yoga: 53.9). However, correlations between anxiety ratings and preferences were low to nonexistent. Several implications for treatment can be considered. First, for those few individuals with high cognitive and low somatic anxiety (only 6.7% of this treatment group), adding a somatic component to treatment may be helpful. Because they may also poorly tolerate the experience of racing thoughts, such individuals may also benefit from adding a mantra component to the meditation practice, while gradually working toward use of mindfulness meditation. Individual variability in preference is poorly understood, so experimenting with different techniques with an individual client seems a viable approach.

Combining with Other Techniques

As noted earlier, mindfulness meditation can be readily combined with other therapeutic approaches, whether as adjunctive treatment or within ongoing individual or group therapy. For example, Kutz's work (Kutz, 1985) demonstrates the use of an MBSR-based treatment as an adjunct to insight-oriented therapy, whereas Linehan's work (Dimidjian & Linehan, 2003; Robins, 2002) with borderline personality disorder incorporates more limited meditation practice as a way to cultivate skills in mindfulness. Mindfulness meditation is strikingly compatible with a range of theoretically distinct approaches. The MBSR and MBSR-related programs (such as MBCT and MB-EAT) incorporate substantial amounts of cognitive-behavioral and educational components. The value of mindfulness practice for helping someone move beyond surface reactions and become more aware of subtle or complex feelings is compatible with insight-oriented psychodynamic approaches (Epstein, 1995; Rubin, 1985). The presumption—and evidence—that mindfulness meditation helps access higher levels of wisdom or spiritual experience in the face

of stress or anxiety makes it compatible with transpersonal/humanistic approaches to therapy (Walsh, 1992, 1999a).

As noted earlier, virtually all meditation practices are combinations of concentrative and mindfulness techniques (Goleman, 1988). For example, use of a mantra during daily activities may help to disengage reactivity while engaging a sense of calm and wise awareness or mindfulness (Easwaren, 1991; Keating, 1997). Although most mindfulness practices being taught within therapeutic contexts avoid use of a mantra, some individuals may benefit from combining brief mantra-based practice with mindfulness meditation, particularly if they experience persistent intrusion of “racing” thoughts or experience increased agitation while practicing, as noted earlier in relation to individuals with high cognitive anxiety. Because a mantra engages the language center of the brain, it may be more effective than is a non-language-based focus (such as the breath) in interrupting intrusive or ruminative thinking.

Compliance and Adherence

Not all individuals will enjoy meditation practice or find it compelling. Completion rates of the MBSR program speak to this consideration. Within one 2-year period, of 784 individuals enrolled, 598 (76.3%) completed the program, with completion rates somewhat higher for individuals with stress-related syndromes (79%) than with chronic pain patterns (70%; Kabat-Zinn & Chapman-Waldrop, 1988). Considerable attention has been given to maintaining high levels of involvement in the MBSR program (Salmon, Santorelli, & Kabat-Zinn, 1998). The standard MBSR training and the MBCT therapy includes 45-minute meditation sessions, delivered by tapes, once per day. This length is modeled on the length of practice in traditional Vipassana and Zen settings. Briefer lengths have been used in adaptations of the MBSR with some groups, such as medical students. One concern with the 45-minute period is compliance, although evidence suggests that more practice occurs when longer sessions are used (Kabat-Zinn, personal communication, June 2004). Other adaptations of the MBSR program, such as MB-EAT, may use shorter tapes. Many teachers emphasize the regularity of practice over the length of practice. Sitting for even 10 minutes per day may be preferable to skipping days—or weeks. In the mindfulness tradition, even 3 minutes may reinforce the value of bringing a meditative or mindful perspective to a range of daily activities or tasks (Harp, 1996). In my experience working with students, brief but regular periods help them move toward valuing the transformative elements of meditation. Although it may be more important to transmit the importance of the mindful/aware experience than it is to focus on the length of time required, during initial periods of learning meditation, 20 minutes is probably an appropriate minimal goal for most individuals. Otherwise, it is less likely that the person will experience a shift in ability to focus attention and then to manage awareness. Offering the analogy of learning a musical instrument or a new sport can be helpful; patients understand that regular practice heightens the skills needed under the more challenging circumstances of a concert or a game.

As noted earlier, an important issue in clinical use of meditation is the degree to which practice, particularly of mindfulness, is carried over into everyday activities. Although there is artificiality in distinguishing between formal meditative practice and integrating the lessons or results of that practice into daily life, it is an issue particularly important to consider in the therapeutic context. Although continued formal practice (sitting every day or most days) unquestionably deepens and sustains the effects achieved, it is the transfer of mindfulness to everyday life that is particularly important.

Other Challenges to Practice

Gunaratana, a Sri Lanka Buddhist monk and meditation teacher, in his useful small book *Mindfulness in Plain English* (Gunaratana, 1991), outlines 11 problems that arise when meditating, including physical pain, “odd” sensations, drowsiness, inability to concentrate, boredom, fear, agitation, and trying too hard. He addresses each one, with the common thread being encouragement simply to observe each of these experiences as aspects of the mind and the self that may arise even for experienced meditators. It is also useful to realize that if these states arise during meditation practice, they may be present in the background of other activities and represent issues to be dealt with. Typically, most individuals are able to find enough calm in the midst of these experiences to be encouraged to continue to practice. Occasionally, someone reports that his or her mind is racing so much that he or she is unable to find any type of relaxation at all during the initial experiences. This may occur regardless of whether the content of the thoughts is distressing. Reassurance that such agitation reflects a common aspect of the mind, that he or she is not “going crazy,” that with 1–2 weeks of practice this should improve, and that such experience reflects an ever-greater potential value of meditation can help increase someone’s willingness to stay with developing a practice. More active approaches to working with such experiences can include using a mantra, the technique of “noting,” meditating with eyes open with a low unfocused gaze (as in Zen meditation), or using shorter time periods. As practice advances, the person may be able to more easily simply “watch” the rush of thoughts as they arise, but this remains difficult until there has been at least some successful experience of relaxation.

Another pitfall may occur in more advanced meditators who misunderstand Buddhist-based teachings as requiring that one give up the ego or any sense of self. Rather than cultivating mindful awareness of the natural fluctuations of human experience, they suppress the presence of craving or desire to try to meet a goal of psychological growth or spiritual attainment that is unrealistic, particularly at their level of practice. Epstein (1995) discusses this as confusion between “egolessness” as direct realization that desires or aversions do not define the “self,” versus a steady state that can rarely be sustained. Although this issue seldom arises in therapeutic use of meditation in beginners, it may be a concern in individuals who pursue substantial reading in traditional teachings or who attend meditation retreats without understanding the broader context of the teaching.

Uncovering Memories, Dissociation, and Trance Experiences

Mindfulness meditation is often characterized as cultivating the ability to “fall awake,” but all meditative approaches have the potential to induce trance states, access hidden memories, or create dissociative experiences (Walsh & Shapiro, 2006). Kutz and his colleagues (Kutz, 1985), in the study described earlier that investigated a mindfulness-based meditation program as an adjunct to traditional psychotherapy, also carefully assessed the occurrence of untoward or unpleasant reactions; they found that 4 of the 20 patients recovered memories of a past traumatic event. Others described increases in feelings of “defenselessness,” leading to emotionality, anger, fear, and despair. These experiences were, however, balanced by an enhanced sense of self and inner centeredness. For example, one of the therapists noted that a hypochondriacal patient, in dealing with the increased sadness experienced during meditation, finally understood that her excessive concern with physical health had functioned as a defense. This insight almost immediately lessened her preoccupations with somatic symptoms and health problems.

As noted earlier, the prevalence of traumatic reactions within the MBSR program, which draws from a general medical population, has tended to be very low, generally under 1%. Within a psychiatric setting, such experiences may be far more prevalent. Within my own therapy practice, they have covered a range: a woman who found the mild dissociation she could induce so appealing that she began to “zone out” to avoid engaging with her husband (“I could be right there, and he didn’t even know I was somewhere else”); an older man who recovered memories of childhood sexual abuse within 1 week of practice; and a woman who, on trying meditation for treatment for smoking, immediately (within 5 minutes) became flooded with images related to severe sexual abuse. In the case of the first woman, we reviewed appropriate use of meditation practice and explored the need for marital counseling; in the second case, the client decided he wished to continue meditating but followed it with journaling so we could more readily use recovered material in therapy; in the third case, the woman became aware that she had been using her smoking as a way to suppress these memories of abuse, and therefore she decided to return to her previous therapist for more in-depth work. There are also individuals who, for reasons that are not well understood, will experience extremely vivid and even bizarre imagery while meditating, without this necessarily signifying a history of significant abuse or psychiatric problems. Such individuals may need to work to modulating the depth or type of meditation used, to consult with senior meditation teachers, or to further explore the significance of the imagery in other therapeutic contexts.

Therapist Training and Practice

It is very important that a therapist have substantive personal experience with meditation practice before using it professionally. As in hypnotherapy, internal experiences are being cultivated, and it is difficult, if not impossible, to understand the reports of the client in regard to such experiences if one has not practiced it oneself. The certification programs developed for the MBSR program assume that individuals who begin the certification program already have a personal sitting practice. At the same time, it is increasingly recognized that practicing at the level of a meditation “master” is not necessary for incorporating basic techniques into a therapeutic context or for teaching such techniques to others. Personal practice is best started, if available, with a local sitting group or meditation center, where ongoing support is more readily available, or at one of the several Vipassana or insight meditation retreat centers around the country. As Lesh (1970) noted, cultivating mindful awareness may also benefit the clinician in maintaining focus and cultivating empathic concern. Karen Horney (1945, 1987), who was exposed to Zen practice through contact with D. T. Suzuki, found that it allowed her to cultivate “wholehearted attention,” a capacity that contributes to high-quality therapy.

Maintenance of Practice

One question often raised regarding the value of meditation training is whether individuals will continue to practice on their own once formal instruction or involvement with a meditation group has ceased, the implication being that there is little value in learning meditation if it is not practiced on an extended basis. This is a valid question within contemporary clinical practice, and it has been frequently addressed within the traditional literature. It is also a more complicated question than it seems and one that is grappled with in a number of areas of therapeutic practice and behavioral change. For example, there is no question that improving diet or exercise has value; maintaining such improvements is well recognized to be a separate issue.

Mindfulness meditation training might be considered as analogous to certain types of therapeutic interventions, such as cognitive restructuring, in that it is cultivating a set of skills in addition to inducing a particular state of being. The individual who has participated in a substantial meditation experience learns how to better shift attention at will, to focus more easily, to use the breath to facilitate physical relaxation, to recognize emotional reactivity more quickly, and to return to a state of equanimity. Such abilities exist independent of meditation practice, but they are rarely as systematically cultivated.

In the long-term follow-up of Kabat-Zinn's study of individuals with anxiety and panic attacks (Miller, Fletcher, & Kabat-Zinn, 1997; Miller et al., 1995) effects were maintained up to 5 years, yet only about half of the participants reported any continued use of meditation practice, and most of that was irregular. Long-term follow-up of chronic pain patients (Kabat-Zinn, Lipworth, Burney, & Sellers, 1986) revealed similar patterns; about half of participants available for follow-up reported continued use of breath awareness up through 4 years, with 30–40% reporting regular sitting practice (at least 3 times/week for 15 minutes or more). A practice effect on pain experience was evident, but it failed to reach statistical significance due to sample size limitations. Much like any skill (playing a musical instrument, learning a sport), basic capacities are retained to a substantial degree, but regular practice will deepen and expand them.

Continued sitting practice appeals to many individuals and undoubtedly deepens the experience, contributing to an ability to handle difficult situations with equanimity and to maintaining the likelihood of drawing on mindfulness under a range of circumstances. Many individuals maintain regular sitting, coupled with occasional longer retreats, feeling that this combination allows them to deepen their stress management skills and to access an inner wisdom and insight more readily and that it cultivates spiritual growth, self-acceptance, and compassion for others.

RESOURCE MATERIAL

Several types of resources can be considered in introducing clients to mindfulness meditation practice, including reading materials and referral to meditation sitting groups or retreats. Many communities have ongoing sitting groups, which may help a client deepen a personal practice and provide group support, particularly if he or she is otherwise learning meditation within an individual therapy context. Whether a client is encouraged to attend a retreat, for a weekend or longer, should probably depend on the client's enthusiasm for practice. Most sitting groups and retreat environments are focused on a particular tradition (i.e., Zen, Tibetan, or Vipassana), so that should be investigated either by the therapist or the client and preferably considered in relation both to therapeutic goals and to the specific training or spiritual messages that might be conveyed. The programs offered at the Omega Institute in Rhinebeck, New York, tend to be wide ranging in focus (www.omega.com).

A substantial amount of available resource material is appropriate for helping beginning meditators understand and appreciate the potential value of practice. One consideration in suggesting material is whether a client is interested in the spiritual context of meditative traditions. Clients who are unfamiliar with the literature available may be put off by the religious or spiritually oriented material shelved with other books on meditation in a typical large bookstore. The list of suggested resources at the end of the chapter contains several highly readable guides that present meditation practice from a secular perspective. *Meditation for Dummies* (Bodian, 1999) is a particularly well-balanced overview of different meditation approaches at an introductory level. I generally ask clients

whether they have read material or used meditation tapes. If I am unfamiliar with the material, I ask the client to bring it in to show me; this often helps identify sources of misunderstanding or clarify the type of previous experience they have had.

CASE EXAMPLE

Choosing a case example to illustrate use of mindfulness meditation in a therapeutic context is challenging. The applications have been quite varied and are becoming increasingly so; furthermore, much of the empirically validated use is within a group context, presenting distinct challenges for identifying a single typical case. In regard to the MBSR program, *Full Catastrophe Living* (Kabat-Zinn, 1990) presents substantial case material, much of it related to chronic pain management. Segal and his colleagues (Segal et al., 2002), in their manual on Mindfulness-Based Cognitive Therapy for depression, also present useful case material. In relation to use of mindfulness meditation in individual therapy, Germer and his colleagues (Germer et al., 2005) illustrate a range of applications of varying types of mindfulness practice in psychotherapy. Jeffrey Rubin (1996) and Tara Brach (2003) also draw on rich case material to illustrate their applications of mindfulness-based approaches in therapy.

The case presented here is that of a 40-year-old woman who participated in our MB-EAT program and then continued in individual therapy under my supervision. This case illustrates how someone can draw substantial benefit from a highly structured group experience that utilizes both general sitting practice and guided meditations; that benefit can then be deepened by integrating meditation work into individual treatment. M.W. entered our treatment program for binge-eating disorder. She weighed more than 300 pounds, was married, and worked as a master's-level therapist. She was vivacious, very intelligent, and extremely articulate, and she acknowledged turning to food primarily to manage stress. She had tried many diets, often losing substantial amounts of weight and then gaining it back. She had grown up in a professional family that placed substantial importance on physical fitness and weight, but she had struggled with weight since childhood and admitted having binge-eat problems since age 15. Aside from meeting criteria for binge eating disorder, she had no other notable psychiatric symptoms, but she had a history of sexual abuse in childhood. She acknowledged that although she projected a confident persona, she was in reality extremely hard on herself, with much of the negative self-judgment focused on her inability to control her weight and eating.

During the MB-EAT program, she responded very positively to the meditation practice, reporting high levels of compliance with sitting, and noting how valuable the mindfulness exercises were in staying away from automatic eating. Unlike most of the group participants who found the meditation practice particularly valuable, she lost little or no weight during the group treatment. However, she noted that her relationship to food changed markedly. She said that she had learned to "honor my hunger," became aware of satiety, and came to "care about what I put in my body," and her eating patterns continued to improve during the 4-month follow-up. When being interviewed almost 3 years later, she recalled the last meal that she ate with the group (a buffet prepared by group members) as "one of the best meals I've ever eaten in my life."

Several months after the end of the group, she began individual therapy with one of her group coleaders, with the focus primarily on interpersonal relations and some other long-standing issues. Two and a half years later, she had begun to focus on weight issues again, enrolling first in a commercial high-protein weight-loss program and then in Weight Watchers, and had lost over 50 pounds. At that time, she acknowledged binge

eating only a few times a year; when she did, she said she was always mindful of the circumstances and used the episode to examine why her stress levels were high enough to trigger the binge. She also noted that although she was no longer as hungry for rich foods, she actually enjoyed food more and that it played a better role in her life. She also noted that she was now able to tolerate “slips” in her dieting efforts, without these triggering binges. Although she was rarely practicing formal meditation, she frequently used mindfulness and breath awareness and continued to attribute much of her self-growth, not only in regard to eating but also in relation to other areas of her life, to the meditation training and practice, saying “it helps me hook into my inner wisdom. Meditation slows you down enough to be in touch with God . . . and God lives in all of us.”

COMMENTS AND REFLECTIONS

I have tried to convey the potential value of mindfulness meditation within the therapy context. There is a growing appreciation of mindfulness as a cognitive process that is powerful in its potential for heightening self-regulation and for disengaging the type of automatic reactivity, whether emotional or behavioral, that leads to suffering. Meditation practice, although not the only path to cultivating an ability to bring mindfulness into moment-to-moment activity, is certainly a powerful one. Over the past 25 years, the range and complexity of mindfulness meditation practices is being increasingly recognized and appreciated. The empirical foundation for understanding the value of mindfulness-based approaches is growing rapidly, both within the framework of “stress management” and more broadly as a means to understanding how optimal functioning may require optimal management of stress-inducing situations. As with a number of other stress management approaches outlined in this volume, it is important to keep in mind that many of these approaches go far beyond relatively simple “relaxation” effects in their value to individuals. Mindfulness meditation may, in particular, provide clients with tools to engage the full range of their capabilities without becoming caught up in patterns of overdetermined emotional and behavioral reactions to stress situations.

REFERENCES

- Arnold, L. E. (2001). Alternative treatments for adults with attention-deficit hyperactivity disorder (ADHD). *Annals of the New York Academy of Sciences*, 931, 310–341.
- Astin, J. A. (1997). Stress reduction through mindfulness meditation: Effects on psychological symptomatology, sense of control, and spiritual experiences. *Psychotherapy and Psychosomatics*, 66(2), 97–106.
- Astin, J. A., Berman, B. M., Bausell, B., Lee, W.-L., Hochberg, M., & Forsys, K. L. (2003). The efficacy of mindfulness meditation plus qigong movement therapy in the treatment of fibromyalgia: A randomized controlled trial. *Journal Of Rheumatology*, 30(10), 2257–2262.
- Austin, J. H. (1998). *Zen and the brain: Toward an understanding of meditation and consciousness*. Cambridge, MA: MIT Press.
- Austin, J. H. (2006). *Zen-brain reflections: Reviewing recent developments in meditation and states of consciousness*. Cambridge, MA: MIT Press.
- Bach, P., & Hayes, S. C. (2002). The use of acceptance and commitment therapy to prevent the rehospitalization of psychotic patients: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, 70(5), 1129–1139.
- Baer, R. A. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science and Practice*, 10(2), 125–143.
- Baer, R. A., Smith, G. T., & Allen, K. B. (2004). Assessment of mindfulness by self-report: The Kentucky Inventory of Mindfulness Skills. *Assessment*, 11, 191–204.

- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*(1), 27–45.
- Bankart, C. P. (2006). *Freeing the angry mind*. Oakland, CA: New Harbinger Press.
- Benson, H. (1975). *The relaxation response*. New York: Morrow.
- Benson, H. (1982). Body temperature changes during the practice of g Tum-mo yoga. *Nature, 295*(5846), 234–236.
- Bernhard, J. D., Kristeller, J., & Kabat-Zinn, J. (1988). Effectiveness of relaxation and visualization techniques as an adjunct to phototherapy and photochemotherapy of psoriasis. *Journal of the American Academy of Dermatology, 19*(3), 572–574.
- Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., et al. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*(3), 230–241.
- Boals, G. F. (1978). Toward a cognitive reconceptualization of meditation. *Journal of Transpersonal Psychology, 10*(2), 143–182.
- Bodhi, B. (2000). *The connected discourses of the Buddha: A new translation of the Samyutta nikaya* (Vol. 2). Boston: Wisdom.
- Bodian, S. (1999). *Meditation for dummies*. Foster City, CA: IDG Books Worldwide.
- Bowen, S., Witkeiwitz, K., Dillworth, T., Chawla, N., Simpson, T., Ostafin, B., et al. (2006). Mindfulness meditation and substance use in an incarcerated population. *Psychology of Addictive Behaviors, 20*(3), 343–347.
- Brach, T. (2003). *Radical acceptance: Embracing your life with the heart of a buddha*. New York: Bantam Books.
- Breslin, F. C., Zack, M., & McMain, S. (2002). An information-processing analysis of mindfulness: Implications for relapse prevention in the treatment of substance abuse. *Clinical Psychology, 9*, 275–299.
- Brown, D., & Engler, J. (1984). A Rorschach study of the stages of mindfulness meditation. In D. Shapiro & R. N. Walsh (Eds.), *Meditation: Classic and contemporary perspectives* (pp. 232–262). New York: Aldine.
- Brown, D., Forte, M., Rich, P., & Epstein, G. (1982). Phenomenological differences among self hypnosis, mindfulness meditation, and imaging. *Imagination, Cognition and Personality, 2*(4), 291–309.
- Brown, D. P., & Fromm, E. (1988). Hypnotic treatment of asthma. *Advances, 5*(2), 15–27.
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822–848.
- Brown, K. W., & Ryan, R. M. (2004). Perils and promise in defining and measuring mindfulness: Observations from experience. *Clinical Psychology: Science and Practice, 11*(3), 242–248.
- Buchheld, N., & Walach, H. (2002). Achtsamkeit in vipassana-meditation und psychotherapie: Die entwicklung des 'freiburger fragebogens zur achtsamkeit.' *Zeitschrift für Klinische Psychologie, Psychiatrie und Psychotherapie, 50*(2), 153–172.
- Budilovsky, J., & Adamson, E. (2002). *The complete idiot's guide to meditation* (2nd ed.). New York: Alpha.
- Carlson, L. E., Speca, M., Patel, K. D., & Goodey, E. (2003). Mindfulness-based stress reduction in relation to quality of life, mood, symptoms of stress, and immune parameters in breast and prostate cancer outpatients. *Psychosomatic Medicine, 65*(4), 571–581.
- Carlson, L. E., Speca, M., Patel, K. D., & Goodey, E. (2004). Mindfulness-based stress reduction in relation to quality of life, mood, symptoms of stress and levels of cortisol, dehydroepiandrosterone sulfate (dheas) and melatonin in breast and prostate cancer outpatients. *Psychoneuroendocrinology, 29*(4), 448–474.
- Carmody, J., Reed, G., Kristeller, J. L., & Merriam, P. (in press). Mindfulness, spirituality, and health-related symptoms. *Journal of Psychosomatic Research*.
- Carrington, P. (1998). *The book of meditation*. Boston: Element Press.
- Carson, J. W., Carson, K. M., Gil, K. M., & Baucom, D. H. (2004). Mindfulness-based relationship enhancement. *Behavior Therapy, 35*(3), 471–494.
- Chadwick, P., Mead, S., & Lilley, B. (2004). *Responding mindfully to unpleasant thoughts and images: Reliability and validity of the mindfulness questionnaire*. Manuscript in preparation.
- Chadwick, P., Taylor, K. N., & Abba, N. (2005). Mindfulness groups for people with psychosis. *Behavioural and Cognitive Psychotherapy, 33*(3), 351–359.
- Cloninger, C. R., Svrakic, D. M., & Przybeck, T. R. (1993). A psychobiological model of temperament and character. *Archives of General Psychiatry, 50*(12), 975–990.

- Coleman, J. W. (2001). *The new Buddhism*. New York: Oxford University Press.
- Cox, R. J. (2000). Relating different types of Christian prayer to religious and psychological measures of well-being. *Dissertation Abstracts International*, 61(2), 1075.
- Cuthbert, B., Kristeller, J., Simons, R., Hodes, R., & Lang, P. J. (1981). Strategies of arousal control: Biofeedback, meditation, and motivation. *Journal of Experimental Psychology: General*, 110(4), 518–546.
- D'Aquili, E. G., & Newburg, A. B. (1998). The neuropsychological basis of religions, or why God won't go away. *Zygon: Journal of Religion and Science*, 33(2), 187–201.
- Dass, R. (1987). A ten-year perspective. In D. Anthony & B. Ecker (Eds.), *Spiritual choices: The problems of recognizing authentic paths to inner transformation* (pp. 139–152). St. Paul, MN: Paragon House.
- Davidson, R. J., Goleman, D. J., & Schwartz, G. E. (1976). Attentional and affective concomitants of meditation: A cross-sectional study. *Journal of Abnormal Psychology*, 85(2), 235–238.
- Davidson, R. J., & Harrington, A. (Eds.). (2002). *Visions of compassion: Western scientists and Tibetan Buddhists examine human nature*. New York: Oxford University Press.
- Davidson, R. J., Kabat-Zinn, J., Schumacher, J., Rosenkranz, M., Muller, D., Santorelli, S. F., et al. (2003). Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic Medicine*, 65(4), 564–570.
- Delmonte, M. M. (1985). Meditation and anxiety reduction: A literature review. *Clinical Psychology Review*, 5(2), 91–102.
- Delmonte, M. M. (1990a). George Kelly's personal construct theory: Some comparisons with Freudian theory. *Psychologia: An International Journal of Psychology in the Orient*, 33(2), 73–83.
- Delmonte, M. M. (1990b). Meditation and change: Mindfulness versus repression. *Australian Journal of Clinical Hypnotherapy and Hypnosis*, 11(2), 57–63.
- Delmonte, M. M. (1990c). Repression and somatization: A case history of hemodynamic activation. *International Journal of Psychosomatics*, 37(1), 37–39.
- Dimidjian, S., & Linehan, M. M. (2003). Defining an agenda for future research on the clinical application of mindfulness practice. *Clinical Psychology: Science and Practice*, 10(2), 166–171.
- Dunn, B. R., Hartigan, J. A., & Mikulas, W. L. (1999). Concentration and mindfulness meditations: Unique forms of consciousness? *Applied Psychophysiology and Biofeedback*, 24(3), 147–165.
- Easterlin, B. L., & Cardena, E. (1998). Cognitive and emotional differences between short- and long-term vipassana meditators. *Imagination, Cognition and Personality*, 18(1), 69–81.
- Easwaren, E. (1991). *Meditation: A simple 8-point path for translating spiritual ideals into daily life*. Tomales, CA: Nilgiri Press.
- Emmons, M. L. (1978). *The inner source: A guide to meditative therapy*. San Luis Obispo, CA: Impact.
- Emmons, M. L., & Emmons, J. (2000). *Meditative therapy*. Atascadero, CA: Impact.
- Engler, J. (1998). Buddhist psychology: Contributions to Western psychological theory. In A. Molino (Ed.), *The couch and the tree: Dialogues in psychoanalysis and Buddhism* (pp. 111–118). New York: North Point Press.
- Epstein, M. (1995). *Thoughts without a thinker: Psychotherapy from a Buddhist perspective*. New York: Basic Books.
- Epstein, M. (2001). *Going on being: Buddhism and the way of change, a positive psychology for the West*. New York: Broadway Books.
- Feldman, G. C., Hayes, A. M., Kumar, S. M., Greeson, J. M., & Larenceau, J. P. (in press). Development, factor structure, and initial validation of the cognitive and affective mindfulness scale. *Journal of Psychopathology and Behavioral Assessment*.
- Fontana, D., & Slack, I. (1997). *Teaching meditation to children*. Boston: Element Books.
- Forester, B., Kornfeld, D. S., Fleiss, J. L., & Thompson, S. (1993). Group psychotherapy during radiotherapy: Effects on emotional and physical distress. *American Journal of Psychiatry*, 150(11), 1700–1706.
- Fromm, E. (1994). *The art of being*. London: Continuum International.
- Fulton, P. R. (2005). Mindfulness as clinical training. In C. K. Germer, R. D. Siegel, & P. R. Fulton (Eds.), *Mindfulness and psychotherapy* (pp. 55–72). New York: Guilford Press.
- Germer, C. K., Siegel, R. D., & Fulton, P. R. (Eds.). (2005). *Mindfulness and psychotherapy*. New York: Guilford Press.
- Ghoncheh, S., & Smith, J. C. (2004). Progressive muscle relaxation, yoga stretching, and ABC relaxation theory. *Journal of Clinical Psychology*, 60(1), 131–136.

- Gifford-May, D., & Thompson, N. L. (1994). "Deep states" of meditation: Phenomenological reports of experience. *Journal of Transpersonal Psychology, 26*(2), 117–138.
- Glueck, B., & Stroebel, C. (1975). Biofeedback and meditation in the treatment of psychiatric illness. *Comprehensive Psychiatry, 16*(4), 303–321.
- Goldenberg, D. L., Kaplan, K. H., Nadeau, M. G., Brodeur, C., Smith, S., & Schmid, C. H. (1994). A controlled study of a stress-reduction, cognitive-behavioral treatment program in fibromyalgia. *Journal of Musculoskeletal Pain, 2*(2), 53–66.
- Goleman, D. (1988). *The meditative mind: The varieties of meditative experience*. New York: Putnam.
- Goleman, D. (2003). *Destructive emotions: How can we overcome them? A scientific dialogue with the Dalai Lama*. New York: Bantam Books.
- Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research, 57*(1), 35–43.
- Gunaratana, H. (1991). *Mindfulness in plain English*. Boston: Wisdom.
- Haimerl, C. J., & Valentine, E. R. (2001). The effect of contemplative practice of intrapersonal, interpersonal, and transpersonal dimensions of the self-concept. *Journal of Transpersonal Psychology, 33*(1), 37–52.
- Hanh, T. N. (1975). *The miracle of mindfulness*. Boston: Beacon Press.
- Hanh, T. N. (1991). *Peace is every step*. Berkeley, CA: Parallax Press.
- Hanh, T. N. (1995). *Living Buddha, living Christ*. New York: Riverhead Books.
- Hanh, T. N. (1996). *Breathe! You are alive*. New York: Bantam Books.
- Hanh, T. N. (1997). *Teachings on love*. Berkeley, CA: Parallax Press.
- Harp, D. (1996). *The three minute meditator* (3rd ed.). Oakland, CA: New Harbinger.
- Hart, W. (1987). *The art of living: Vipassana meditation as taught by S. N. Goenka*. San Francisco: HarperCollins.
- Hayes, A. M., & Feldman, G. (2004). Clarifying the construct of mindfulness in the context of emotion regulation and the process of change in therapy. *Clinical Psychology: Science and Practice, 11*(3), 255–262.
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. New York: Guilford Press.
- Hesslinger, B., van Elst, L. T., Nyberg, E., Dykieriek, P., Richter, H., Berner, M., et al. (2002). Psychotherapy of attention deficit hyperactivity disorder in adults: A pilot study using a structured skills training program. *European Archives of Psychiatry and Clinical Neuroscience, 252*(4), 177–184.
- Holroyd, J. (2003). The science of meditation and the state of hypnosis. *American Journal of Clinical Hypnosis, 46*(2), 109–128.
- Horney, K. (1945). *Our inner conflicts*. New York: Norton.
- Horney, K. (1987). *Final lectures*. New York: Norton.
- Kabat-Zinn, J. (1990). *Full catastrophe living*. New York: Delacorte Press.
- Kabat-Zinn, J. (2005). *Coming to our senses: Healing ourselves and the world through mindfulness*. New York: Hyperion.
- Kabat-Zinn, J., Chapman, A., & Salmon, P. (1997). The relationship of cognitive and somatic components of anxiety to patient preference for alternative relaxation techniques. *Mind/Body Medicine, 2*, 101–109.
- Kabat-Zinn, J., & Chapman-Waldrop, A. (1988). Compliance with an outpatient stress reduction program: Rates and predictors of program completion. *Journal of Behavioral Medicine, 11*(4), 333–352.
- Kabat-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness meditation for the self-regulation of chronic pain. *Journal of Behavioral Medicine, 8*(2), 163–190.
- Kabat-Zinn, J., Lipworth, L., Burney, R., & Sellers, W. (1986). Four-year follow-up of a meditation-based program for the self-regulation of chronic pain: Treatment outcomes and compliance. *Clinical Journal of Pain, 2*, 159–173.
- Kabat-Zinn, J., Massion, A., Hebert, J., & Rosenbaum, E. (1998). Meditation. In J. Holland (Ed.), *Psycho-oncology* (pp. 767–779). Oxford, UK: Oxford University Press.
- Kabat-Zinn, J., Massion, A. O., Kristeller, J., Peterson, L. G., Fletcher, K. E., Pbert, L., et al. (1992). Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *American Journal of Psychiatry, 149*(7), 936–943.
- Kabat-Zinn, J., Wheeler, E., Light, T., Skillings, A., Scharf, M. J., Cropley, T. G., et al. (1998). Influence of a mindfulness meditation-based stress reduction intervention on rates of skin clearing in patients

- with moderate to severe psoriasis undergoing phototherapy (uvb) and photochemotherapy (puva). *Psychosomatic Medicine*, 60(5), 625–632.
- Keating, T. (1997). *Active meditations for contemplative prayer*. New York: Continuum.
- Kornfield, J. (1993). *A path with heart*. New York: Bantam Books.
- Kristeller, J. (2004). Meditation: Multiple effects, a unitary process? In M. Blows, S. Srinivasan, J. Blows, C. P. Bankart, M. M. Delmonte, & Y. Haruki (Eds.), *The relevance of the wisdom traditions in contemporary society: The challenge to psychology* (pp. 21–37). Delft, the Netherlands: Eburon.
- Kristeller, J., Hallett, B., & Wolever, R. Q. (2003). *A mindfulness meditation-based treatment for binge eating disorder: Treatment manual*. Unpublished manuscript.
- Kristeller, J., & Johnson, T. (2005). Cultivating loving kindness: A two-stage model of the effects of meditation on empathy, compassion, and altruism. *Zygon*, 40, 391–407.
- Kristeller, J. L., Baer, R. A., & Quillian-Wolever, R. (2006). Mindfulness-based approaches to eating disorders. In R. A. Baer (Ed.), *Mindfulness-based treatment approaches* (pp. 75–93). Burlington, MA: Academic Press.
- Kristeller, J. L., & Hallett, C. B. (1999). An exploratory study of a meditation-based intervention for binge eating disorder. *Journal of Health Psychology*, 4(3), 357–363.
- Kristeller, J. L., Rhodes, M., Cripe, L., & Sheets, V. (2006). Exploring spiritual and religious concerns with cancer patients improves quality of life and relationship with physician. *International Journal of Psychiatry in Medicine*, 35, 329–347.
- Kutz, I. (1985). Meditation as an adjunct to psychotherapy: An outcome study. *Psychotherapy and Psychosomatics*, 43(4), 209–218.
- Kutz, I., Borysenko, J. Z., & Benson, H. (1985). Meditation and psychotherapy: A rationale for the integration of dynamic psychotherapy, the relaxation response, and mindfulness meditation. *American Journal of Psychiatry*, 142(1), 1–8.
- Kwee, M., & Ellis, A. (1998). The interface between rational emotive behavior therapy (REBT) and Zen. *Journal of Rational-Emotive and Cognitive Behavior Therapy*, 16(1), 5–43.
- Lazar, S. W., Bush, G., Gollub, R. L., Fricchione, G. L., Khalsa, G., & Benson, H. (2000). Functional brain mapping of the relaxation response and meditation. *NeuroReport*, 11(7), 1581–1585.
- Lazar, S. W., Kerr, C., Wasserman, R. H., Gray, J. R., Greve, D., Treadway, M. T., et al. (2005). Meditation experience is associated with increased cortical thickness. *NeuroReport*, 16, 1893–1897.
- Lehrer, P. M. (1983). Progressive relaxation and meditation: A study of psychophysiological and therapeutic differences between two techniques. *Behaviour Research and Therapy*, 21(6), 651–662.
- Lehrer, P. M., Sasaki, Y., & Saito, Y. (1999). Zazen and cardiac variability. *Psychosomatic Medicine*, 61(6), 812–821.
- Lehrer, P. M., & Woolfolk, R. L. (1994). Respiratory system involvement in Western relaxation and self-regulation. In B. H. Timmons & R. Ley (Eds.), *Behavioral and Psychological Approaches to Breathing Disorders* (pp. 191–203). New York: Plenum Press.
- Leigh, J., Bowen, S., & Marlatt, G. A. (2005). Spirituality, mindfulness and substance abuse. *Addictive Behaviors*, 30(7), 1335–1341.
- Lesh, T. V. (1970). Zen meditation and the development of empathy in counselors. *Journal of Humanistic Psychology*, 10(1), 39–74.
- Linden, W. (1973). Practicing of meditation by school children and their levels of field dependence-independence, test anxiety, and reading achievement. *Journal of Consulting and Clinical Psychology*, 41(1), 139–143.
- Linehan, M. M. (1993a). *Cognitive-behavioral treatment of borderline personality disorder*. New York: Guilford Press.
- Linehan, M. M. (1993b). *Skills training manual for treating borderline personality disorder*. New York: Guilford Press.
- Lutz, A., Greischar, L. L., Rawlings, N. B., Ricard, M., & Davidson, R. J. (2004). Long-term meditators self-induce high-amplitude gamma synchrony during mental practice. *Proceedings of the National Academy of Sciences of the U.S.A.*, 101(46), 16369–16373.
- Lynch, T. R., & Bronner, L. (2006). Mindfulness and dialectical behavior therapy: Application with depressed older adults with personality disorders. In R. A. Baer (Ed.), *Mindfulness and acceptance-based interventions: Conceptualization, application and empirical support* (pp. 217–236). Burlington, MA: Academic Press.
- Ma, S. H., & Teasdale, J. D. (2004). Mindfulness-based cognitive therapy for depression: Replication

- and exploration of differential relapse prevention effects. *Journal of Consulting and Clinical Psychology*, 72(1), 31–40.
- Mahoney, M. J. (2003). *Constructive psychotherapy: A practical guide*. New York: Guilford Press.
- Marlatt, G. A., & Kristeller, J. L. (1999). Mindfulness and meditation. In W. R. Miller (Ed.), *Integrating spirituality into treatment: Resources for practitioners* (pp. 67–84). Washington, DC: American Psychological Association.
- Marlatt, G. A., Witkiewitz, K., Dillworth, T. M., Bowen, S. W., Parks, G. A., Macpherson, L. M., et al. (2004). Vipassana meditation as a treatment for alcohol and drug use disorders. In S. C. Hayes, V. M. Follette, & M. M. Linehan (Eds.), *Mindfulness and acceptance: Expanding the cognitive-behavioral tradition* (pp. 261–287). New York: Guilford Press.
- Marriott, J. A. (1989). The “cord” component in panic attack syndrome: Five case studies. *Australian Journal of Clinical Hypnotherapy and Hypnosis*, 10(1), 17–24.
- Menahemi, A. (Director), & Ariel, E. (Writer). (1997). *Doing time, doing vipassana* [DVD]. Karuna Films.
- Miller, J., Fletcher, K., & Kabat-Zinn, J. (1997). Three-year follow-up and clinical implications of a mindfulness meditation-based stress reduction intervention in the treatment of anxiety disorders. *Mind/Body Medicine*, 2(3), 101–109.
- Miller, J. J., Fletcher, K., & Kabat-Zinn, J. (1995). Three-year follow-up and clinical implications of a mindfulness meditation-based stress reduction intervention in the treatment of anxiety disorders. *General Hospital Psychiatry*, 17(3), 192–200.
- Mruk, C. J., & Hartzell, J. (2003). *Zen and psychotherapy: Integrating traditional and nontraditional approaches*. New York: Springer.
- Murphy, M., Donovan, S., & Taylor, E. (1999). *The physical and psychological effects of meditation: A review of contemporary research with a comprehensive bibliography, 1981–1996*. Sausalito, CA: Institute of Noetic Science.
- Otani, A. (2003). Eastern meditative techniques and hypnosis: A new synthesis. *American Journal of Clinical Hypnosis*, 46(2), 97–108.
- Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, practice*. New York: Guilford Press.
- Peterman, A. H., Fitchett, G., Brady, M. J., Hernandez, L., & Cella, D. (2002). Measuring spiritual well-being in people with cancer: The Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale (FACIT-SP). *Annals of Behavioral Medicine*, 24(1), 49–58.
- Plews-Ogan, M., Owens, J. E., Goodman, M., Wolfe, P., & Schorling, J. (2005). A pilot study evaluating mindfulness-based stress reduction and massage for the management of chronic pain [Electronic version]. *Journal Of General Internal Medicine*, 20(12), 1136–1138.
- Reibel, D. K., Greeson, J. M., Brainard, G. C., & Rosenzweig, S. (2001). Mindfulness-based stress reduction and health-related quality of life in a heterogeneous patient population. *General Hospital Psychiatry*, 23(4), 183–192.
- Ricard, M. (2006). *Happiness: A guide to developing life’s most important skill*. New York: Little, Brown.
- Robins, C. J. (2002). Zen principles and mindfulness practice in dialectical behavior therapy. *Cognitive and Behavioral Practice*, 9(1), 50–57.
- Rosenbaum, E. H., & Rosenbaum, I. (2005). *Everyone’s guide to cancer supportive care: A comprehensive handbook for patients and their families*. Kansas City, MO: Andrews McMeel.
- Rosenbaum, R. (1998). *Zen and the heart of psychotherapy*. Philadelphia: Brunner/Mazel.
- Rosenzweig, S., Reibel, D. K., Greeson, J. M., Brainard, G. C., & Hojat, M. (2003). Mindfulness-based stress reduction lowers psychological distress in medical students. *Teaching and Learning in Medicine*, 15(2), 88–92.
- Rozman, D. (1994). *Meditating with children*. Boulder Creek, CA: Planetary Publications.
- Rubin, J. B. (1985). Meditation and psychoanalytic listening. *Psychoanalytic Review*, 72(4), 599–613.
- Rubin, J. B. (1996). *Psychotherapy and Buddhism: Toward an integration*. New York: Plenum Press.
- Rubin, J. B. (1999). Close encounters of a new kind: Toward an integration of psychoanalysis and Buddhism. In R. Segall (Ed.), *Encountering Buddhism* (pp. 31–60). Albany: State University of New York Press.
- Sagula, D., & Rice, K. G. (2004). The effectiveness of mindfulness training on the grieving process and emotional well-being of chronic pain patients. *Journal of Clinical Psychology in Medical Settings*, 11(4), 333–342.

- Salmon, P., Santorelli, S., & Kabat-Zinn, J. (1998). Intervention elements promoting adherence to mindfulness-based stress reduction programs in the clinical behavioral medicine setting. In S. A. Shumaker, E. B. Schron, J. K. Ockene, & W. L. McBee (Eds.), *Handbook of health and behavior change* (2nd ed., pp. 239–266): New York: Springer.
- Salzberg, S. (1999). *Voices of insight*. Boston: Shambhala.
- Salzberg, S., & Goldstein, J. (2002). *Insight meditation: A step-by-step course on how to meditate*. Boulder, CO: Sounds True.
- Saxe, G. A., Hebert, J. R., Carmody, J. F., Kabat-Zinn, J., Rosenzweig, P. H., Jarzowski, D., et al. (2001). Can diet in conjunction with stress reduction affect the rate of increase in prostate specific antigen after biochemical recurrence of prostate cancer? *Journal of Urology*, 166(6), 2202–2207.
- Schwartz, G. E., Davidson, R. J., & Goleman, D. J. (1978). Patterning of cognitive and somatic processes in the self-regulation of anxiety: Effects of meditation versus exercise. *Psychosomatic Medicine*, 40(4), 321–328.
- Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. New York: Guilford Press.
- Segall, S. R. (2005). Mindfulness and self-development in psychotherapy. *Journal of Transpersonal Psychology*, 37(2), 143–163.
- Simple, R. J., Lee, J., & Miller, L. F. (2006). Mindfulness-based cognitive therapy for children. In R. A. Baer (Ed.), *Mindfulness and acceptance-based interventions: Conceptualization, application and empirical support* (pp. 143–166). Burlington, MA: Academic Press.
- Shapiro, D. H., & Walsh, R. N. (Eds.). (1984). *Meditation: Classic and contemporary perspectives*. New York: Aldine.
- Shapiro, S. L., Astin, J., Bishop, S., & Cordova, M. (2005). Mindfulness-based stress reduction for health care professionals: Results from a randomized trial. *International Journal of Stress Management*, 12(2), 164–176.
- Shapiro, S. L., Schwartz, G. E., & Bonner, G. (1998). Effects of mindfulness-based stress reduction on medical and premedical students. *Journal of Behavioral Medicine*, 21(6), 581–599.
- Shapiro, S. L., & Walsh, R. (2003). An analysis of recent meditation research and suggestions for future directions. *Humanistic Psychologist*, 31(2), 86–114.
- Shapiro, S. L., & Walsh, R. (2004). An analysis of recent meditation research and suggestions for future directions: Correction. *Humanistic Psychologist*, 32(1), 2.
- Singer, W. (2001). Consciousness and the binding problem. *Annals of the New York Academy of Sciences*, 929, 123–146.
- Smith, H., & Novak, P. (2003). *Buddhism: A concise introduction*. New York: HarperCollins.
- Smith, J. C. (2003). “How sturdy is the empirical groundwork of clinical relaxation?” A reply. *PsycCRITIQUES*, 48(4), p. 530.
- Smith, J. C. (2004). Alterations in brain and immune function produced by mindfulness meditation: Three caveats. *Psychosomatic Medicine*, 66(1), 148–149.
- Smith, J. C., & Joyce, C. A. (2004). Mozart versus new age music: Relaxation states, stress, and ABC relaxation theory. *Journal of Music Therapy*, 41(3), 215–224.
- Specia, M., Carlson, L. E., Goodey, E., & Angen, M. (2000). A randomized, wait-list controlled clinical trial: The effect of a mindfulness meditation-based stress reduction program on mood and symptoms of stress in cancer outpatients. *Psychosomatic Medicine*, 62(5), 613–622.
- Specia, M., Carlson, L. E., Mackenzie, M. J., & Angen, M. (2006). Mindfulness-based stress reduction as an intervention for cancer patients. In R. A. Baer (Ed.), *Mindfulness and acceptance-based interventions: Conceptualization, application and empirical support* (pp. 239–261). Burlington, MA: Academic Press.
- Sperry, L. (2001). *Spirituality in clinical practice: Incorporating the spiritual dimension in psychotherapy and counseling*. Philadelphia: Brunner-Routledge.
- Stunkard, A. J. (1951). Some interpersonal aspects of an Oriental religion. *Psychiatry*, 14, 419–431.
- Stunkard, A. J. (2004). Suzuki Daisetz: An appreciation. *The Eastern Buddhist*, 36, 192–228.
- Surrey, J. L. (2005). Relational psychotherapy, relational mindfulness. In C. K. Germer, R. D. Siegel, & P. R. Fulton (Eds.), *Mindfulness and psychotherapy* (pp. 91–110). New York: Guilford Press.
- Tacon, A. M., McComb, J., Caldera, Y., & Randolph, P. (2003). Mindfulness meditation, anxiety reduction, and heart disease: A pilot study. *Family and Community Health*, 26(1), 25–33.

- Teasdale, J. D. (1999a). Emotional processing, three modes of mind and the prevention of relapse in depression. *Behaviour Research and Therapy*, 37(1), S53–S77.
- Teasdale, J. D. (1999b). Metacognition, mindfulness, and the modification of mood disorders. *Clinical Psychology and Psychotherapy*, 6, 146–155.
- Teasdale, J. D., Segal, Z., & Williams, J. M. (1995). How does cognitive therapy prevent depressive relapse and why should attentional control (mindfulness) training help? *Behaviour Research and Therapy*, 33(1), 25–39.
- Teasdale, J. D., Segal, Z. V., & Williams, J. M. G. (2003). Mindfulness training and problem formulation. *Clinical Psychology: Science and Practice*, 10(2), 157–160.
- Teasdale, J. D., Segal, Z. V., Williams, J. M. G., Ridgeway, V. A., Soulsby, J. M., & Lau, M. A. (2000). Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *Journal of Consulting and Clinical Psychology*, 68(4), 615–623.
- Walach, H., Buchheld, N., & Buttenmüller, V. (2006) Measuring mindfulness: The Freiburg Mindfulness Inventory. *Personality and Individual Differences*, 40(8), 1543–1555.
- Wallace, B. A. (2006). *The attention revolution: Unlocking the power of the focused mind*. Ithaca, NY: Snow Lion.
- Walsh, R. (1992). The search for synthesis: Transpersonal psychology and the meeting of east and west, psychology and religion, personal and transpersonal. *Journal of Humanistic Psychology*, 32(1), 19–45.
- Walsh, R. (1999a). Asian contemplative disciplines: Common practices, clinical applications, and research findings. *Journal of Transpersonal Psychology*, 31(2), 83–107.
- Walsh, R. (1999b). *Essential spirituality*. New York: Wiley.
- Walsh, R. (2004). Asian psychotherapies. In R. J. Corsini & D. Wedding (Eds.), *Current psychotherapies* (7th ed., pp. 547–559). Belmont, CA: Wadsworth.
- Walsh, R., & Shapiro, S. (2006). The meeting of meditative disciplines and Western psychology. *American Psychologist*, 61(3), 1–13.
- Weissbecker, I., Salmon, P., Studts, J. L., Floyd, A. R., Dedert, E. A., & Sephton, E. (2002). Mindfulness-based stress reduction and sense of coherence among women with fibromyalgia. *Journal of Clinical Psychology*, 9, 297–307.
- Welch, S. S., Rizvi, S. L., & Dimidjian, S. (2006). Mindfulness in dialectical behavior therapy. In R. A. Baer (Ed.), *Mindfulness and acceptance-based interventions: Conceptualization, application and empirical support* (pp. 117–139). Burlington, MA: Academic Press.
- Welwood, J. (2000). *Toward a psychology of awakening: Buddhism, psychotherapy, and the path of personal and spiritual transformation*. Boston: Shambala Press.
- Williams, K. A., Kolar, M. M., Reger, B. E., & Pearson, J. C. (2001). Evaluation of a wellness-based mindfulness stress reduction intervention: A controlled trial. *American Journal of Health Promotion*, 15(6), 422–432.
- Witkieiwitz, K., Marlatt, G. A., & Walker, D. (2005). Mindfulness-Based Relapse Prevention for alcohol and substance use disorders. *Journal of Cognitive Psychotherapy*, 19(3), 211–228.
- Woolfolk, R. L. (1984). Self-control meditation and the treatment of chronic anger. In Shapiro, D. H., & Walsh, R. N. (Eds.), *Meditation: Classic and contemporary perspectives* (pp. 550–554). New York: Aldine.

SUGGESTED RESOURCES

- Bodian, S. (1999). *Meditation for dummies*. Foster City, CA: IDG Books Worldwide.
- Borysenko, J. (1987). *Minding the body, mending the mind*. New York: Bantam.
- Harp, D. (1996). *The three minute meditator* (3rd ed.). Oakland, CA: New Harbinger.
- Kabat-Zinn, J. (1990). *Full catastrophe living*. New York: Dell.
- Kabat-Zinn, J. (2005). *Coming to our senses: Healing ourselves and the world through mindfulness*. New York: Hyperion.
- Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach for preventing relapse*. New York: Guilford Press.