Chapter 10
Meditation

Chapter 9 provided a rationale for the use of the relaxation response in the treatment of stress-related disorders. We now explore several techniques used to create the relaxation response. The purpose of this chapter is to provide a clinically relevant introduction to meditation.

In our culture, *meditation* refers to the act of thinking, planning, pondering, or reflecting. Our Western definitions are, however, not representative of the essence of the Eastern notion of meditation, in whose tradition, meditation is a process by which one attains "enlightenment." It is a growth-producing experience along intellectual, philosophical, and existential dimensions. Given the focus of our text, we use the term *meditation* to mean, quite simply, the autogenic practice of a genre of techniques that have the potential for inducing the relaxation response in the participant through the use of a repetitive focal device. Inherent in the success of using these procedures is achieving a mental state characterized by a non-ego-centered and nonintrusive mode of thought processing. According to Sethi (1989), meditation provides an "attempt to achieve a blissful state where stress has lost all its negative psychophysiological impacts" (p. 10).

History of Meditation

It is difficult to trace the history of meditation without considering it within the context of religion (Braboszcz, Hahusseau, & Delorme, 2010). The origins of religion date back to prehistoric times, and data suggest that it was common practice for older civilizations to use repetitive, rhythmic chants and sacrificial offerings (e.g., gold, food, animals, or sometimes humans) in attempts to appease the gods (Joseph, 1998). Therefore, a legacy of strong religious beliefs is used to instill a calming, relaxing effect on the mind, often at the expense of imposing fear on the worshipers.

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Some of the earliest written records on meditation come from the Hindu traditions of Vedantism around 1500 B.C.E. These records consist of scriptures called Vedas, which discuss the meditative traditions of ancient India. Around 500 to 600 B.C.E., other forms of meditation developed, such as the Taoist in China and the Buddhist in India. From 1000 C.E. to 1100 C.E., the Zen form of meditation, called "zazen," gained popularity in Japan.

In Christianity, the use of repetitive prayers to effect a calming response spread by word of mouth. One of these earliest prayers, recorded in the fourteenth century on Mount Athos in Greece (Benson & Stuart, 1993), required participants to concentrate on their breathing and to repeat to themselves on each exhalation, "Lord Jesus Christ, have mercy on me." Like other meditative practices, participants were instructed to discard intrusive thoughts passively and return to the repetitive prayer (Benson & Stuart, 1993). Until the eighteenth century in the Western Hemisphere, medicine was the domain of the church, and monks treated the majority of physical and emotional symptoms. Thus, chanting and repetitious prayers may be considered the beginnings of formal meditative practices specifically designed to mitigate stress and anxiety (Joseph, 1998).

Meditation was introduced to the western world in 1920 by Indian spiritualist Paramahansa Yogananda (Hussain & Bhushan, 2010). However, in the 1960s, a form of "westernized" style in the Hindu tradition called "transcendental meditation" (TM) was started in the USA by Maharishi Mahesh Yogi. TM gained immense popularity in America during a time of political and social unrest and activism. Part of TM's appeal was its secular emphasis, its elimination of unnecessary elements of traditional yoga practices, and its relative simplicity of initiation. Meditation has flourished in the USA in the past several decades, and its practice is recognized as one of the top ten most commonly used forms of complementary and alternative medicine (CAM) therapy as noted by the National Center for Complementary and Alternative Medicine (NCCAM) (Barnes, Powell-Griner, McFann, & Nahin, 2002; Barnes, Bloom, & Nahin, 2008). In fact, a national survey 9.4% of respondents indicated that they had meditated in the past year (NCCAM, 2010). It is worth noting that although the preponderance of the literature on meditation attests to its relaxing effects, some literature suggests that meditation may have widely differing effects on consciousness and the body, including the potential, under some circumstances, for physiological arousal (Cortright, 1997).

Types of Meditation

As mentioned earlier, and for the purpose of our text, we refer to the practice of meditation as a group of techniques or procedures that have the potential of inducing the relaxation response. There are many meditation techniques that are practiced; however, they are usually grouped into two basic approaches—concentrative meditations and mindfulness/insight meditations (Hart, 2007; Hussain & Bhushan, 2010). Concentration meditation techniques involve focusing on specific mental or

sensory activity (Cahn & Polich, 2006), an example being TM, whereas mindfulness meditation, according to Jon Kabat-Zinn (founder of the Center for Mindfulness at the University of Massachusetts Medical School), is defined as "moment-to-moment-awareness" in paying attention to senses, thoughts, and physical sensations (Kabat-Zinn, 1990). Walsh and Shapiro (2006) acknowledge that training and maintenance of attention, either in a narrowing of focus in concentrative meditation, or broadening of perceptivity in mindfulness meditation, is a common characteristic of both forms. Regardless of the general type, one element seemingly consistent with all forms of meditative practice is a stimulus, or thing, on which the meditator focuses his or her awareness. Olendzki (2009) describes meditation "as focusing the mind to a single point, unifying it, and placing it upon a particular object" (p. 38), and according to Naranjo and Ornstein (1971), this stimulus is something to "dwell upon," in effect, a focal device.

Therefore, for our purpose, meditative techniques may be categorized by the nature of their focal devices. Using this criterion, there are four general forms of meditative techniques:

1. *Mental Repetition.* This form of focal device involves dwelling on some mental event. The classic example of a mentally repetitive focal device is the "mantra," a word, phrase, or mystical sound that is repeated over and over, usually silently to oneself. We include chanting in this category as well. TM uses a mantra format, with the mantra chosen from a list of Sanskrit words. Benson (1975) and Benson and Stuart, 1993) employs neutral words such as *one, peace*, or *love* to evoke the relaxation response. One Tibetan Buddhist mantra in verse form is "Om mani padme hum." In Sikh meditation, the word *Vahiguru*, which literally means "wonderful light," is repeated for 10–20 min daily, and Hare Krishna practitioners repeat the 16-word mantra, "Hare Krishna Hare Krishna, Krishna Krishna Hare Hare, Hare Rama Hare Rama, Rama Rama Hare Hare," 1,728 times a day, keeping count with their prayer beads.
2. *Physical Repetition.* This form of focal device involves focusing one's awareness on some physical act. An ancient Yogic (Hindu) style of repetitive meditation focuses on the physically repetitive act of breathing. There are many different approaches to Yoga (which means "union"), and one of them, Hatha Yoga, uses various forms of breath control and breath counting (called *pranayama).* Hatha Yoga focuses on physical education, and the aspect most recognized by the public involves the practice of postures (called *asanas*). The Moslem Sufis are known for their practice of continuous, circular dancing or whirling. The name "whirling dervishes" was given to the ancient practitioners of this style. Finally, the popularity of jogging in the USA has given rise to the study of the effects of such activity. One effect reported by some joggers, either on the open road or on a treadmill, is a meditative-like experience, which could be caused by repetitive breathing or the repetitive sounds of feet pounding on the ground or treadmill.
3. *Problem Contemplation.* This focal device involves attempting to solve a problem with paradoxical components. The Zen *koan* is the classic example. In this case, a seemingly paradoxical problem or riddle is presented for contemplation.

"What is the sound of one hand clapping?" is a commonly used *koan.* Koans are intended to foster meditators to remove themselves from a thought-based state of consciousness and access pure awareness of the present moment.

4. *Visual Concentration.* This focal device involves visually focusing on an image—a picture, a candle flame, a leaf, a relaxing scene, or anything else. The *mandala*, a geometric design that features a square within a circle, representing the union of humanity within the universe, is often used in Eastern cultures for visual concentration.

Mechanisms of Action

Even after more than 40 years of scientific study (Braboszcz et al., 2010), the exact mechanisms underlying meditation remain unclear. However, as noted, the focal device or stimulus to "dwell upon," considered the common and essential link between various forms of meditation, appears to be a potential source of applied exploration (Benson, 1975; Benson & Stuart, 1993; Glueck & Stroebel, 1975, 1978; Naranjo & Ornstein, 1971; Ornstein, 1972).

Not long after its introduction to Western culture, researchers proposed that the focal device appears to prepare the neocortex for a shift from the normally dominant, analytic, ego-centered mode of thought processing (associated with left brain activity) to the intuitive, non-ego-centered mode of thought processing (associated with the brain's right neocortical hemisphere) (see Davidson, 1976; Naranjo & Ornstein, 1971; Ornstein, 1972). When the focal device is successfully employed, the brain's order of processing appears to be altered. "When the rational (analytic) mind is silenced, the intuitive mode produces extraordinary awareness" (Capra, 1975, p. 26). This awareness, or heightened attention, is the goal of all meditative techniques.

In the last edition of this text, we focused on the proposed shift from the "left" hemisphere to the "right" hemisphere of the brain that was thought to occur as a result of mediation. Cahn and Polich (2006) in reviewing lateralized EEG measures suggested that "meditation practice may alter the fundamental electrical balance between the cerebral hemispheres to modulate individual differences in affective experience" (p. 188), but noted that additional studies are needed to support this tenet. However, in the last decade, there have been tremendous advances in assessing the underlying anatomical correlates of medication using sophisticated imagery techniques. Hözel et al. (2011a, 2011b) provide a comprehensive review of this topic, so the interested reader is referred to this work. What follows is a brief summary and expansion in some areas of the major findings noted by Hölzel, her colleagues, and others.

In the past 20 years, research has suggested that in individuals who have a proclivity to react positively and let go rapidly of negative emotions, their baseline electrical activity of the brain exhibits more left-sided anterior activation compared to those who harbor more negative emotions (Davidson, 2004). A recent study on

26 participants being taught meditation and practicing over a 5-week training period for an average of just more than 6 h showed a significantly greater leftward shift in frontal EEG asymmetry when compared to a waitlist control group, a pattern suggestive of more positive emotions and occurring without the need for years of meditative practice (Moyer et al., 2011). Data have shown that during the onset of meditation, there is increased activation in the putamen (the area of the brain involved in part in coordinating automatic behaviors) and motor cortex, while there is less overall activity in the right hemisphere (mainly in the medial part of the right occipital and parietal lobes and precuneus) (Baeretsen et al., 2010). In this same study, sustained meditation was shown to activate the head of the left caudate nucleus, while deactivations occurred mostly in the white matter of the right hemisphere (primarily in the posterior part of the occipito-pariteto-temporal area, as well as in the frontal lobes).

Neuroimaging studies focusing on attention have also shown that when compared with matched controls (age, gender, education) experienced meditators showed greater activation in the rostral part of the anterior cingulated cortex (ACC), which is thought to enable and sustain executive attention (Hölzel et al., 2007). Structural MRI studies indicate that experienced meditators have greater cortical thickness in the dorsal ACC compared with controls (Grant, Courtemanche, Duerden, Duncan, & Rainville, 2010) and increased white matter integrity in the ACC (Tang et al., 2010). Electroencephalographic data are consistent with frontal midline theta brain wave activity (see Chap. 14) during meditation (Aftanas & Golocheikine, 2002), which is associated with ACC activity and has implications for the use of meditation to treat disorders such as ADHD (Passarotti, Sweeney & Pavuluri, 2010) and bipolar disorder (Fountoulakis, Giannakopoulos, Kovari & Bouras, 2008). When compared to controls, meditators had greater cortical thickness and more gray matter concentration in the right anterior insula, which is associated with increased body awareness (Hölzel et al., 2007; Lazar et al., 2005).

Other studies have implicated meditation in the improvement of emotional regulation, such that meditation decreases negative mood (Jha, Stanley, Kiyonaga, Wong, & Gelfand, 2010) and enhances positive mood (Jain et al., 2007). From a neurophysiological perspective, increased activation of regions in the prefrontal cortex and decreased activation of the amygdala have been shown to successfully regulate affective responses (Harenski & Hamann, 2006), and neuroimaging studies have shown where mindfulness meditation has shown increased prefrontal activation and improved prefrontal control over the amygdala (Creswell, Way, Eisenberger, & Lieberman, 2007). Other data suggest that emotional control and regulation may depend on the amount of training and expertise of the meditator (Brefczynski-Lewis, Lutz, Schaefer, Levinson, & Davidson, 2007).

A study comparing 16 pre- and 14 posttreatment patients diagnosed with primary generalized social anxiety disorder (SAD) who underwent 8 weeks of mindfulness-based stress reduction (MBSR) showed improvements in anxiety and depression symptoms and reduced amygdala activity (Goldin & Gross, 2010). Hözel et al. (2011a, 2011b) demonstrated in a sample of 26 participants with high reported scores on the Perceived Stress Scale (PSS) who underwent 8 weeks of MBSR that reduced

scores on PSS were correlated positively with decreases in gray matter density in the right amygdala. Additionally, a high-resolution MRI study of 44 participants (22 active meditation practitioners and 22 controls) showed that meditators, who averaged 24.2 years of practice, had larger gray matter volumes in the right orbitofrontal cortex and the right hippocampus, both of these being implicated in emotional regulation (Luders, Toga, Lepore, & Gaser, 2009). Hözel et al. (2011a, 2011b) in a longitudinal study of 16 participants with no meditation experience recently demonstrated increased gray matter concentrations in the left hippocampus after only 8 weeks of MBSR when compared to 17 control participants. In this same study participants also evinced increased gray matter concentration in the posterior cingulated cortex and the temporo-parietal junction, suggesting along with the increased concentration of gray matter in the hippocampus, an ability that is consistent with meditative teachings to alter one's internal perspective (Buckner & Carroll, 2007).

Other EEG data, despite being far from conclusive, have implicated increases in theta wave activity (often associated with a daydreaming-like state) and alpha wave activity (associated with relaxation) and decreases in overall frequency (Andersen, 2000; Cahn & Polich, 2006; Chiesa & Serretti, 2010). Some studies suggest that higher theta and alpha activity may be related to years of practice, the meditative technique used (as compared to concentrative meditation techniques, mindfulness meditation produced greater theta activity), and slower baseline EEG frequency in long-term meditators (Aftanas & Golocheikine, 2002; Andersen, 2000; Dunn, Hartigan, & Mikulas, 1999).

Austin (1998), in an earlier summary of EEG data, acknowledges that episodes of "microawakening" and "microsleep" (going directly from sleeping to waking back to sleep again, without the usual stepwise progression of surface EEG findings) are common during meditation. He further suggests that this implies that the brain may pass suddenly through its brain wave activity, and that "during meditation, some unstable fragments of physiological mechanisms seem to be briefly 'loosened' and are then available to recombine in new, unexpected ways" (p. 93).

Part of this recombining may lead to the state of "extraordinary awareness" alluded to earlier. This state has been called many things. In the East, it is called *nirvana* or *satori.* A liberal translation of these words means "enlightenment." Similar translations for this state include "truth consciousness" or "being-cognition." In the early Western World, those few individuals who understood it used the term *supraconsciousness* or the "cosmic consciousness." Benson (1975) and Benson and Stuart (1993) has called this state the "relaxation response," as described in the preceding chapter.

Although modern research investigations continue to attempt to qualify the neurophysiology of this supraconscious state, results continue to remain inconclusive. Part of the difficulty in gathering more conclusive results is participant selection. Most participants in meditation studies are considered beginners by traditional standards. As noted previously, data suggest that possible neurophysiological explanations include simultaneous EEG amplitude increases and decreases in various parts of the brain, particularly in alpha and theta waves, and primarily occur in individuals with many years of meditative experience (Aftanas & Golocheikine, 2002; Andresen, 2000; Jevning, Wallace, & Beidebach, 1992; Walsh, 1996).

It is important to emphasize that meditation and the achievement of the supraconscious state are not always the same! It should be made abundantly clear to the patient that meditation is the process, or series of techniques, that the meditator employs to achieve the goal of attaining the relaxation response and its associated supraconsciousness.

Therapeutic Hallmarks

As just mentioned, the "extraordinary awareness" of the relaxation response, or supraconsciousness state, is the desired goal of the devoted practitioners of all meditative styles. However, it is important for the clinician *and* the patient alike to understand that achievement of this state is never assured, and that this state may not be achieved every time, even by very experienced meditators. Given this, the question must then arise, "Is the time spent in the meditative session wasted if the meditator is unable to achieve the supraconscious state?" The answer to this question is a resounding No! Positive therapeutic growth can be achieved without reaching the supraconscious state. The rationale for this statement lies in the fact there exist several "therapeutic hallmarks" inherent in the process of meditation as one approaches the supraconscious state. While Shapiro (1978), in his seminal work, discusses five steps in the meditative process: (1) difficulty in breathing, (2) wandering mind, (3) relaxation, (4) detached observation, and (5) higher state of consciousness, and Austin (2006) describes five stages in the meditative process to mitigate distractibility, we have chosen to describe and expand upon the hallmarks we see in the meditative process.

The first and most fundamental of these hallmarks resides in practice itself. Even the ancient Hindu and Zen scriptures on meditation acknowledge that the attempt to achieve the supraconscious state is far more important than actually reaching it. By simply taking time to meditate, the patient is making a conscious effort to improve his or her health and reduce the effects of excessive stress. Similarly, by emphasizing to the patient the importance of simply meditating, rather than achieving the supraconscious state, the clinician removes much of the competitive, or success-versus-failure, component in this process. Meditation is an art; however, as noted by Austin (2006), "one problem is that it takes such a long time to become art*less*" (p. 14). As summarized nicely by Kabat-Zinn (1993), "Practice simply means inviting yourself to embody calmness, mindfulness, and equanimity right here, right now, in this moment, as best you can" (p. 267). Moreover, as noted by Hözel et al. (2011a, 2011b), mindfulness practice requires that the meditator expose him or herself to whatever is present in his or her field of awareness, accept it, and refrain from engaging in internal reactivity, including cognitive avoidance, toward it. In many ways this mindfulness approach parallels the behavioral therapy technique of exposure therapy (Öst, 1997).

The second hallmark is a noticeable increase in somatic relaxation: a decline in oxygen consumption by about 20–32% (Sarang & Telles, 2006; Telles, Reddy, & Nagendra, 2000) and a lowering of respiratory rate of more than 50%

(Arambula, Pepper, Kawakami & Gibney, 2001), reduced sensitivity to CO_2 (Kesterson & Clinch, 1989), acute decline of adrenocortical activity (Bevan, 1980), decreases in galvanic skin response (GSR) activity, sympathetic nervous system reactivity, electromyographic (EMG) reactivity and cortisol levels (Mohan, Sharma, & Bijlani, 2011), and decreases in heart rate and blood pressure (Murphy & Donovan, 1988; Ospina et al., 2007; Shapiro & Walsh, 1984). The combination of these and other physiological factors leads to an autogenically induced state of somatic relaxation. This awakened state of hypometabolic functioning referred to in the literature is therapeutic in that (1) the body is placed into a mode equal or superior to sleep with regard to the restorative functions performed (Jevning et al., 1992; Orme-Johnson & Farrow, 1978) and (2) ergotropic stimulation of afferent proprioceptive impulses is reduced, and trophotropic responses are enhanced (Davidson, 1976; Gellhorn & Kiely, 1972).

The third hallmark is that of detached observation (Astin, 1997; and see Shapiro, 1978). In the Indian scriptures, this is described as a state in which the meditators remain "a spectator resting in him-or herself" as he observes his environment. In this state egoless, passive state of observation, the meditator simply "coexists" with the environment rather than confronting or attempting to master it. It is a nonanalytic, intuitive state. One similar experience that many individuals have had is that of "highway hypnosis," a state often experienced by individuals driving on monotonous expressways. At one point they may notice that they are at Exit 6; in what seems a mere moment later, they may notice they are at Exit 16 yet have no immediate recollection of the 10 intervening exits. Many refer to this as a "daydreaming state." It is important to note that the driver of the car is fully capable of driving; this is not a sleep state. Had an emergency arisen, the driver would have been able to react appropriately. Therefore, the clinician should explain that this state is not one of lethargy or total passivity, which happens to be a concern for many patients.

The final step in the meditative experience is the "supraconscious state" or *nirvana*. This appears to be a summation of all the previous states except that it is more intense. Davidson (1976) and Sethi (1989) and Austin (2006) have characterized its nature:

1. A positive mood (tranquility, peace of mind)
2. A dissolving of worry and anxiety
3. An experience of unity, or oneness, with the environment; what the ancients called the joining of microcosm (human) with macrocosm (universe)
4. A sense of ineffability (being inexpressible or transcendent)
5. A feeling of active peace
6. An alteration in time–space relationships
7. An enhanced sense of reality and meanings
8. A development of new creative energy
9. Paradoxicality, that is, acceptance of things that seem paradoxical in ordinary consciousness
10. A state of "no-mind" in which the natural flow of mental states and actions are void of all egocentric intrusions

Fig. 10.1 A meditative continuum

Given that most clinicians receive myriad questions concerning the active nature of meditation, we have placed some common experiences on a continuum (see Fig. 10.1). This continuum of meditative experiences is not completely progressive from one discrete state to the next. A meditator may progress from any one state to another and then back again. Also, varying degrees of depth may be experienced within each state. Note, specifically, that boredom and distracting thoughts often precede more positive effects. The clinician should explain to the patient that this is a natural occurrence, and that he or she should be tolerant when this happens and simply return his or her concentration to the focal device.

As mentioned earlier, the meditator should be discouraged from evaluating the meditative sessions in a success–failure paradigm. Simple, descriptive reports to the clinician are useful to monitor the course of the activity for a period of 2–3 weeks. A daily log might be kept by the patient, as long as it is descriptive and not evaluative.

Research on the Clinical Applications and Effects of Meditation

Well-controlled research studies on the clinical effectiveness of meditation are available [see Austin (1998) for an earlier review, and Chiesa and Serretti (2010), Fortney and Taylor (2010), and Rubia (2009) for more recent reviews]. These studies recognize a potentially wide range of stress-related therapeutic applications for meditation. One general area of benefit entails strategies for refocusing or retraining attention. As noted by Sethi (1989) in his influential text,

> The importance of strategic meditation (SM), in enabling cognitive shift, becomes a crucial tool in allocation of attention as a resource for stress management. This proposition is based on the conceptualization that consciousness is a cybernetic system that can be managed through attention via strategic choice (meditation). (p. 86)

Other, specific meditative and mindfulness techniques have been found useful for the following:

1. In the treatment of generalized autonomic arousal and excessive ergotrophic tone or emotional distress (Astin, 1997; Benson, 1985; Burns, Lee, & Brown, 2011; Shapiro, Schwartz, & Bonner, 1998; Young & Baime, 2010)
2. In the treatment of anxiety disorders (Goldin, Ramel, & Gross, 2009; Kabat-Zinn et al., 1992; Lehrer & Woolfolk, 1984; Miller, Fletcher, & Kabat-Zinn, 1995;

Rahul & Joseph, 2009; Ramel, Goldin, Carmona, & McQuaid, 2004) and anxiety related to schizophrenia (Brown, Davis, LaRoco, & Strasburger, 2010); "enhancement," and "well-being" (Benson, 1985; Carmody & Baer, 2008; Coppola & Spector, 2009; Davidson, Kabat-Zinn, Schumacher, Rosenkranz, Muller, & Santorellli, 2003; Kutz, Borysenko, & Benson, 1985; Smith, Compton, & West, 1995)

3. In the treatment of psoriasis (Gaston, Crombez & Dupuis, 1989; Kabat-Zinn et al., 1998)
4. In the treatment of migraines (Wachholtz & Pargament, 2008).
5. For treatment of binge eating (Kristeller & Hallett, 1999)
6. As an adjunct in the treatment of cancer patients (Ando et al., 2009; Brennan & Stevens, 1998; Carlson, Speca, Patel, & Goodey, 2004; Gawler, 1998; Matousek & Dobkin, 2010; Smith, Richardson, Hoffman & Pilkington, 2005; Tácon, 2003) and their partners (Birnie, Garland & Carlson, 2010)
7. To reduce the impact of patients with fibromyalgia (Kaplan, Goldenberg & Galvin-Nadeau, 1993; Lush et al., 2009)
8. In the regulation of chronic pain (Kabat-Zinn, Lipworth & Burney, 1985; Plews-Ogan, Owens, Goodman, Wolfe & Schorling, 2005; Rosenzweig et al., 2010) and as an adjunct to palliative care in a hospice setting (Bruce & Davies, 2005)
9. As an intervention for patients with myocardial infarction (MI) or coronary artery disease (CAD) (Buselli & Stuart, 1999; Tácon , McComb, Caldera, & Randolph, 2003; Zamarra, Schneider, Besseghini, Robinson, & Salerno, 1996; Zeidan, Johnson, Gordon, & Goolkasian, 2010)
10. As an adjunct in the treatment of essential hypertension (Barnes, Schneider, Alexander, & Staggers, 1997; Benson, Beary, & Carol, 1974; Sothers & Anchor, 1989)
11. As an adjunct in the treatment of drug and alcohol abuse (Brooks, 1994; Gelderloos, Walton, Orme-Johnson, & Alexander, 1991; Zgierska et al., 2008)
12. In the treatment of rheumatoid arthritis (Pradhan et al., 2007; Zautra et al., 2008)
13. As an adjunct in the treatment of HIV-1 (Cresswell, Myers, Cole & Irwin, 2009)
14. As an adjunct to the treatment of type 2 diabetes (Rosenzweig et al., 2007)
15. In the treatment of symptoms of anxiety and PTSD associated with disaster relief (Waelde et al., 2008) or in survivors of child abuse (Kimbrough, Magyari, Langenberg, Chesney & Berman, 2010).
16. As a complementary treatment for tinnitus (Mazzoli, 2011).
17. As an adjunct in the treatment of ADHD (Black, Milam & Sussman, 2009; Zylowska et al., 2008)

Having provided a rationale for the clinical use of meditation, we now examine its implementation.

How to Implement Meditation

The following discussion is provided as a guide to the clinical use of meditation.

Preparation

In addition to the general precautions for relaxation mentioned in an earlier chapter, the following preparations are important for the implementation of meditation:

1. Determine whether the patient has any specific contraindications for the use of meditation. For example, affective or thought disorders may possibly be exacerbated by meditation. Similarly, the clinician should use care with patients who demonstrate a tendency to employ nonpsychotic fantasy, as in the schizoid personality. There are also possible instances of muscle or gastrointestinal spasms. It should also be noted that some compulsive or action-oriented individuals appear to have greater difficulty in learning to meditate effectively than do less compulsive individuals. Boredom and distracting thoughts appear to compete with meditation.
2. Inquire into the patient's previous knowledge or experience in meditation. Pay particular attention to any mention of cultic or religious aspects. These are the most common misconceptions that patients find troublesome. Some may feel that by meditating, they will be performing a sacrilegious act.
3. Provide the patient with a basic explanation of meditation.
4. Describe to the patient the proper environment for the practice of meditation (see next section).

Components

In his original book, *The Relaxation Response,* and in later reviews and updates of his work, Benson (1975, 1996, 2000; Benson & Stuart, 1993) describes the following basic components in successful meditation:

1. A quiet environment
2. A mental device
3. A passive attitude
4. A comfortable position

In elaborating and expanding Benson's paradigm to some extent, the first condition we recommend is a *quiet environment,* absent of external stimuli that would compete with the meditative process. Many patients state that it is impossible to find such a place. If this is so, then some creativity may be needed. The patient may wish to use music or environmental recordings to "mask" distractions. For example, the steady hum of a fan or an air conditioner may effectively drown out noise. If this is

not possible, the patient may choose to cover his or her eyes and/or use earplugs to reduce external stimulation.

The second condition (for physically passive meditation) is a *comfortable position.* Muscle tension can be disruptive to the meditative process. When first learning, the patient should have most of his or her weight supported. The notable exceptions would be the head and neck. By keeping the spine straight, and the head and neck unsupported, there will be sufficient muscle tension to keep the patient from falling asleep. If the patient does continually falls asleep during meditation, then he or she should use a posture that requires greater muscle tension.

The third condition, a *focal device*, is the link between all forms of meditation, even the physically active forms, as discussed earlier. The focal device appears to act by allowing the brain to alter it normal mode of processing.

The fourth condition, a *passive attitude*, has been called "passive volition" or "passive attention" by some. Benson (1975) states that this "passive attitude is perhaps the most important element" (p. 113). With this attitude, the patient "allows" the meditative act to occur rather than striving to control the meditative process. As Benson and Stuart (1993) have noted, "Don't worry about how well you're doing. When other thoughts come to mind, simply say to yourself, 'Oh, well,' and gently return to the repetition [focal device]" (p. 240).

If the patient is unable to adopt this attitude, he or she will ask questions:

"Am I doing this correctly?"—usually indicative of concern regarding performance.

"How long does this take?"—usually indicative of concern for time.

"What is a *good* level of proficiency?"—usually indicative of concern for performance outcome rather than process.

"Should I try to remember everything I feel?"—usually indicative of overanalysis.

The more the patient dwells on such thoughts, the less successful he or she will be. Distracting thoughts are completely normal during the meditative process and are to be expected. However, adoption of a passive attitude allows the patient to recognize distracting thoughts and simply return concentration to the focal device.

The fifth and final condition that we would recognize is a *receptive psychophysiological environment.* By this we mean a set of internal psychophysiological conditions that will allow the patient to meditate. It has been noted, for example, that psychophysiologically aroused patients have a very low success rate when they attempt to meditate. Therefore, it may be necessary to teach the patients to put themselves in a more "receptive condition" for meditating (this applies to biofeedback, hypnosis, and guided imagery as well). To achieve this receptive condition, the patient may wish to use a few neuromuscular relaxation techniques before the meditation, in order to reduce excessive muscle tension. We have recommended in some circumstances that the patient take a hot bath before meditating. In fact, some patients have reported high levels of success when they meditate while sitting in a hot tub. We have found this infrequently mentioned concept of psychophysiological receptivity to be a critical variable in many clinical experiences. Therefore, the meditative continuum is expanded (Fig. 10.1) to include this variable (see Fig. 10.2).

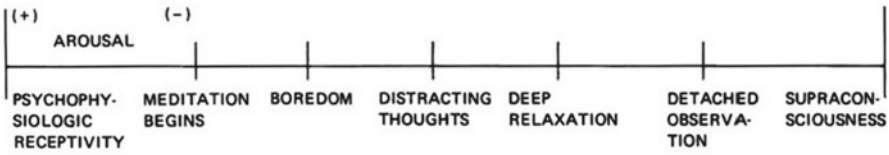

Fig. 10.2 Arousal and the meditative continuum

Example Protocol

This section provides an example of a protocol for a physically passive, mantra-like form of meditation. Use it as a guideline and make necessary revisions in the margins in order to tailor the protocol to your specific needs.

Background Information. The purpose is to familiarize you with the use of meditation as a way of reducing the stress in your life. These instructions consist of background information and specific directions for the use of four techniques from which you may choose in order to meditate. Follow all the instructions closely. Later you may wish to modify a part of the technique to fit a personal preference or situation, but in the initial learning phase, you should do all the exercises exactly as instructed. Once you have chosen one of the meditative techniques, employ that technique as instructed for 15 to 20 min of uninterrupted meditation once or twice a day.

Some people, not familiar with the nature and origins of meditation, confuse its pure form with its possible uses. There are important differences. The techniques of meditation presented here are derived from ancient Eastern philosophies that have then been blended with modern relaxation and stress-reduction techniques. Although some of the techniques were used in the practice of specific religions, to say that meditation is a religious practice is like saying wine is a religious instrument simply because in many religions wine is used in the ceremonies. Meditation is a technique of quieting the mind, which, of course, is a necessary prerequisite for reducing anxiety and tension.

As taught here, a quiet mind is an end in itself. What you do with this valuable skill is, of course, up to you.

The fundamentals of meditation are often misunderstood, as meditation itself is difficult to define. It is not a physiological state. Nor is it any specific psychological feeling or a religion. Rather, as used here, meditation is a technique so basic that it has transcended time, cultures, races, religions, and ideologies. The physiological, psychological, and philosophical goals of meditation cannot be achieved without training, and mastery of technique cannot be achieved except through continued practice.

Although there are many types of meditation, the most popular meditative techniques in Western society are derived from specific practices of ancient Yoga and Zen. Each type of meditation represents a variation of purpose and technique. Those presented here are thought to be the best suited for stress reduction. The technique

is the easiest to learn and the one most devoid of cultic, religious, and spiritual overtones. It is complete and can be all the meditation one will ever need; or, it may serve as an introduction to more specific types.

There are several essential steps you should follow when learning to meditate.

A first essential step is to find a quiet environment, both external and internal. A quiet room away from others who are not meditating is essential, especially while learning. Take the phone off the hook, or at least go into a room without one. Generally, do whatever can be done to reduce external noise. If you cannot completely eliminate the noise, which is often the case in busy households or in college dorms, and so forth, use ear plugs. Play a record or tape of some soft instrumental sounds, or use any of the numerous environmental sound recordings that are commercially available. Even the steady hum of a fan or an air conditioner can effectively block out, or mask, external noise. You may also wish to turn down, or completely off, any lights in the room. Now that you have quieted your external environment, the next essential step is to work on quieting your internal environment. One way is to reduce muscle tension, which represents one of the biggest obstacles to successful meditation. Spend some time relaxing your muscles. One way is to reduce muscle tension is to sit comfortably, you may not feel like a real meditator unless you are sitting in the Eastern, cross-legged lotus position, but that takes a great deal of flexibility and training. For now, sit comfortably on the floor, or, better yet, sit in a straight-backed, comfortable chair, feet on the floor, legs not crossed, hands resting on the thighs, with fingers slightly opened, not interlocked. You should sit still, but remember, meditation is not a trance. If you are uncomfortable or feel too much pressure on any one spot, move. If you have an itch, scratch. Do not assume a tight inflexible position or attitude. Relax. It is best not to lie down or support your head, or you will tend to fall asleep. Keep the head, neck, and spine in a straight vertical line. A small but significant amount of muscle tension is needed to maintain this posture, and this effort helps prevent sleep from occurring, while at the same time creating an optimal position for learning to meditate.

There are many types of meditation. Some focus on inner forces, inner power, or self-identity. Others focus on external things, such as words, lights, or sounds. Meditation is simply a natural process. And though techniques may differ, the core experience is essentially the same. The basic meditative experience involves concentrating passively on some stimulus, whether it be a word, an image, your breath, or nothing at all. The stimulus acts as a vehicle to keep distracting thoughts out of your mind. And yet, the harder you concentrate on the stimulus, the harder it is to meditate. Although this sounds confusing, it is true, simply because meditation is a "passive" activity. You must allow the stimulus, whatever it is, to interact passively with you. You must learn to concentrate passively on your stimulus. The skill of passive concentration takes time to develop—so don't be discouraged if it seems difficult for the first few weeks. Just continue to practice.

Actual Instruction. You are now ready to begin the actual instruction. To begin with, close your eyes. Notice the quietness. Much of our sensory input comes in through our eyes. Just by closing your eyes, you can do much to quiet the mind.

The Use of Breath Concentration. What we are going to do now is clear our minds. Not of all thoughts, but of ongoing thoughts that use the imagination to increase stress arousal. Focus on your breathing. Shift your awareness from the hectic external world to the quiet and relaxing internal world.

As you breathe in, think in. Let the air out. Think out. In and out. Concentrate on your breathing. Think in. Think out. Breath in through your nose and let the air out through the mouth very effortlessly. Just open your mouth and let the air flow out. Do not force it. Become involved with the breathing process. Concentrate on your breathing. In and out. Now, each time you breathe in, I want you to feel how cold the air is, and each time you breathe out, feel how warm and moist the air is. Do that now. (*Pause 30 s.*)

The Use of One. Now we would like to replace the concentration on breathing with the use of a mantra. A mantra is a vehicle that is often a word or phrase to help keep your mind from wandering back to daydreams. An example of a mantra, suggested by Herbert Benson in his book *The Relaxation Response,* is simply the word *one* (o-n-e). This is a soft, noncultic word that has little meaning as a number. Every time you breathe out, say the word *one* to yourself. Say *one. One.* Say it softly. *One.* Say the word *one* without moving your lips. Say it yet more softly, until it becomes just a mental thought. (*Pause 75 s here.*)

The Use of Om. The word *one* is an example of a mantra: a vehicle to help clear your mind. By concentrating on a word without emotion or significance, your mind's order of processing begins to change. The mind begins to wander, with a quieter, more subtle state of consciousness. Many people like to use words from the ancient Sanskrit language, feeling that they represent soft sounds with spiritual significances that can also be used as a focus for contemplation. The universal mantra is the word *om;* spelled o-m, it also means one. Each time you breathe out say the word *om. Om. Om.* Breathe softly and normally, but now do not concentrate on your breathing. Repeat the mantra in your mind. Just think of saying it. Do not actually move your lips. Just think of it. Do not concentrate on your breathing. Let the mantra repeat itself in your mind. Do not force it. Just let it flow. Gradually the mantra will fade. The mind will be quiet. Occasionally, the quiet will be broken by sporadic thoughts. Let them come. Experience them, then let them leave your mind as quickly as they entered, by simply going stronger to your mantra. Let us now use *om* as a mantra. Say the word *om*, *om.* (*Pause here* 75 *s.*) Remember, the mantra is a vehicle to help clear the mind when you cannot do so without it. Also remember, keep your movements to a minimum, but if you are uncomfortable, move. If you are worried about time, look at a clock. Discomfort or anxiety will prevent full attainment of the relaxed state.

The Use of Counting. A final mantra that you may select if you find your mind wandering too much requires a little more concentration than the three previous meditation techniques.

As you breathe out, begin to count backward from 10 to 1. Say a single number to yourself each time you exhale. As you say the number, try to picture that number in your "mind's eye." When you reach 1, go back to 10 and start over. Let us do that now. (*Pause here 3 min.*)

Reawaken. Now I want to bring attention back to yourself and the world around you. I will count from 1 to 10. With each number you will feel your mind become more and more awake and your body more and more refreshed. When I reach 10, open your eyes, and you will feel the best you've felt all day—you will feel alert, refreshed, full of energy, and eager to resume your activities. Let us begin: 1–2 you are beginning to feel more alert, 3–4–5 you are more and more awake, 6–7 now begin to stretch your hands and feet, 8 now begin to stretch your arms and legs, 9–10 open your eyes *now!* You feel alert, awake; your mind is clear and your body refreshed.

Having read the preceding example, please note the following points:

1. In the example, the patient was given four different mantras from which to choose. Such "freedom of choice" may increase clinical effectiveness. It is important to ask the patient which mantra was best for him or her, and why. Such questions foster introspection and self-understanding.
2. The meditation example contains a *reawaken* step, as does the neuromuscular relaxation example in Chap. 12.
3. The clinician should indicate, at some point, when the patient should meditate. We have found once or twice a day to be sufficient, 15–20 min in duration for each session. As with neuromuscular relaxation, before lunch or before dinner is generally the best time to meditate, although practice in the morning may provide a relaxing start for the entire day.

Summary

In this chapter we discussed the first of several techniques that can be used to engender the relaxation response, specifically, the technique of meditation. Let us review several of the focal points:

1. The history of meditation is rich, vast, and provides the rationale for its clinical applications.
2. The two basic approaches to meditation are concentrative and mindfulness/insight.
3. The practice of meditation is one way to engender a relaxation response. We will review other techniques in later chapters (e.g., neuromuscular relaxation, controlled respiration).
4. Enhanced neuroimaging techniques in the last decade have added to the growing knowledge of anatomical structures associated with meditation.
5. The "supraconscious state," as described in this chapter, may be considered one of the end points or therapeutic hallmarks along a meditative continuum within the relaxation response.
6. Research has now clearly shown that the relaxation response, as engendered by the practice of meditation via a focal device, can be useful in the treatment of a wide variety of stress-related disorders.

7. Within this chapter, a typical protocol for teaching meditation has been provided. The clinician should tailor it to the personal needs of each patient when practical.
8. Finally, it is advisable to always practice meditation, or any other relaxation technique, in an office setting before assigning it as homework. This gives you the opportunity to (1) observe whether the technique is done properly, and (2) talk with the patient about his or her experiences.

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