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## Research and Efficacy

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*We are living in exciting times, when science shines illumination on enlightenment!*

*—(C. Alexander Simpkins & Annellen M. Simpkins)*

People have been talking for millennia about the profound effects of meditation on the mind, body, and spirit. But it is only in recent years that the West has been listening. We are now applying our most advanced scientific methods to explore meditation and, as a result, our understanding of this seemingly ineffable practice is coming into focus. Today we see a flood of high-quality studies that reveal what meditation does and how helpful it is for therapy. We now have a better sense of some of the psychological mechanisms and the impact on the nervous system. We bring you the latest

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research findings about meditation, its efficacy, and its psychological effects in Chapter 1. Chapter 2 provides the neuroscience findings about how meditation changes the nervous system.

With Zen's long tradition of meditation practice and science's recent research supporting its use, you can be confident in adding the meditation methods provided in this book for a powerful set of tools to help yourself and your clients develop to the fullest potential!

# 1

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## The Psychology of Meditation and Its Efficacy for Clinical Practice

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*Just turn on your mind's inner light, and its glow will show you the way. Then you will immediately dispel all the troubling thoughts of imperfection that take away your peace of mind. And effortlessly, you will become perfect and whole, with many open gates to truth before you.*

—(Paraphrased from *Bodhidharma's Breakthrough Sermon*)

Zen offers a way to overcome psychological disturbance and become healthy and happy, to live well. The method is based on concentrating the mind in particular ways. Zen teaches these methods through the practice of meditation. Contrary to our Western perspectives that are based in doing something with a goal in mind, this practice centers on a special way of doing things that is goal-less, referred to as emptiness. This story about one of Buddha's disciples, Subhuti, introduces the concept.

One day Subhuti was meditating under a flowering tree, experiencing a calm and quiet consciousness, empty of thought, present in the moment. A gentle breeze shook the tree and its flowers began to fall down all around him.

The breeze seemed to be saying, "We are praising you for your clear statement about emptiness."

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**Figure 1.1** Cherry Blossom Nature

*Source:* Photographed by C. Alexander Simpkins, Jr., Washington, DC, Spring 2011

“But I haven’t said a word,” answered Subhuti.

“You have not said anything about emptiness and we have not heard anything about emptiness. This is true emptiness.”

The blossoms showered down on Subhuti as he smiled (Figure 1.1).

This book opens you to the practice of emptiness. As Western healers, we are not content to simply experience a helpful method to use with our clients. We also need to place it under the watchful eye of science to ensure that the experience does indeed help people in measurable ways. And yet, how can you measure emptiness and the wordless experience of meditation that brings it about? Obviously there is something happening, because people have been discussing it for millennia. And intuitively, we feel the importance of such experiencing since some of our greatest insights have come in a flash.

Now, a large body of research has revealed repeatedly that the wordless, empty experience found in meditation has healing effects. Meditation can truly move people, opening possibilities for new potentials to emerge, and these changes can be measured. This is enormously important for psychotherapy, because now we have a whole new set of tools to add to our practice, tools

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that can truly help clients to benefit fully from the therapeutic treatments we provide.

Jennifer was a hospice nurse who used meditation as a pivotal part of her therapeutic treatment. She was tall, heavy-set, and large-boned, with curly brown hair softly framing her round face. Her gentle blue eyes and soothing voice emanated warmth. She was a caring and compassionate person who believed in helping others, which was why she had chosen to be a hospice nurse.

Jennifer had been overweight all her life, and now she carried at least 60 extra pounds. Her family doctor had recently warned her to get serious about losing weight. As a nurse, she was well aware of the health benefits of weight loss, but had never been able to do anything about it. Following her doctor's warning, she tried again to lose some weight on her own, but couldn't make any progress. Frustrated, she decided to seek therapy. She had heard about the benefits of meditation, and so she came to us for treatment. A meditational approach seemed an appropriate choice since it would use her compassionate nature to help others to help herself.

As she began therapy, she revealed a number of weights she carried besides pounds. Working at the hospice, she had to face death on a daily basis. She told us that she grew close to her patients, and then they died. She could literally see death creep up on them. Watching people she cared about waste away deeply disturbed her. Grief weighed her down. Then, when a patient finally died, she found it difficult to stop thinking about that person.

Therapy involved her practice of several forms of meditation. First, she learned how to use her attention meditatively by practicing focus meditations. She was surprised to learn that she could direct her attention at will. As she gained skills with her attentional focus, she said, "Wow! I never knew you could do that!"

We also taught her mindfulness meditations: to follow her experience moment by moment and nonjudgmentally, which she was encouraged to practice between sessions as well. Her mindfulness practice set a process in motion. And it helped to moderate the strong emotions of sadness that she experienced. Research shows that meditation helps to balance affect, lower reactivity to negative emotions, and foster better self-regulation as later sections of this chapter describe. But still, she was not losing weight.

Next, she learned Zen meditation, to simply be empty of all thought. When a thought or feeling arose, we told her to notice it, think about it if needed, and then let it go as soon as possible. This was helpful to her in

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learning another important lesson from meditation: how to let go and allow nature to take its course. As she practiced this form of meditation, focusing on nothing and letting go of any thoughts that might intrude, she found that thoughts and feelings of death kept interrupting her meditation.

The thoughts seemed to be about her hospice patients. But then, one night she had a frightening dream. She saw her parents dying at the hospice, shriveled up, and deformed, like frightening monsters. She felt intense grief and horror. She told us that she was surprised about these feelings, because she thought she had gotten over their death long ago. Her parents had both died from cancer in Eastern Europe when she was a little girl. Following their death, she had been sent to the United States to be raised by an aunt, and lived here ever since.

Mindfulness had revealed that she had deep emotion about their death. She recognized feelings of anger that arose, since both had contracted cancer from carcinogens they had been exposed to from living in a polluted industrial city in Eastern Europe. Meditation allowed her to recognize that these feelings were still unresolved. And every time she lost a patient at the hospice, she was living the horror, all over again.

Using the sensitivities and objectivity she was gaining from meditation, she began to recognize a distinction between her love for her parents, her sadness from losing them, and her anger about why they died. Even though these feelings felt strong and real, they were just her reactions. She could sense how the painful emotions of anger and sadness that seem so intractable were not her love for her parents, but were her reactions to their death. And through meditation, she was learning that she *could* do something about her reactions.

In a certain sense, these painful emotions were no more than passing fantasies, fleeting moments. And yet, even though they were impermanent, for that moment when they did exist, they were real, solid, and enduring enough to require that she find some personal resolution of them. Jennifer took a hard look at the nature of life itself, with its inevitable death. She had to recognize that her parents had been victims of their country's mistakes, and that she could do nothing to change that now. She learned to accept her grief as a natural response, and in its acceptance, she found the feelings comforting and even helpful.

She discovered ways to celebrate the lives of those who passed, including her parents. She started a garden in her backyard, since her mother had

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loved gardening, as a way of honoring her mother's memory. We discussed how gardening could be done as a Zen art. She experienced her time spent gardening mindfully. She particularly enjoyed being able to nurture growth. She observed the natural opening and closing of flowers, the living and dying of plants as they passed through the seasons of their lifespan, perennials with their inevitable return, and annuals with their birth-death cycle. She found comfort in nature's order of eternal recurrence. Increasingly, the garden became a hub for her heart, not just the kitchen. As she stood in the midst of the flowers and plants, she experienced empty moments of joy and peace. As Jennifer's tensions eased, the pounds began to shed. She found that now she felt differently about life and death. And with that change, she fully embraced and enjoyed her life.

Insights are sometimes outside the range of conscious thought. Reaching for them rationally, we miss them. Meditation stimulates irrational, unconscious processes. You initiate the process by your meditation practice. As it begins to unfold, the formless takes form. You can bring a profound transformation on a deep existential level. Once felt, change happens. Then, all our useful therapeutic methods become easier to implement. Attitudes shift in healthier directions, behaviors become more optimal, and people find deeper happiness than they have ever known.

## THE PSYCHOLOGY OF MEDITATION

What are the psychological factors involved in meditation? Researchers have investigated the effects of meditation on attention and emotions, two key psychological factors so crucial for psychotherapy. You may want to refer back to the sections that follow after you have read Part II, where you can learn more about meditation and try doing it. We encourage you to keep referring back to your own experience, because this is where verification of many of these psychological principles is found.

### Meditation as Special Qualities of Attention

Researchers (K. W. Brown & Gordon, 2009) have pointed out that meditation can be characterized as the turning of sustained attention toward an object. The quality of this attention is sometimes referred to as *bare attention*, meaning that it is not intertwined with abstract thoughts about the past

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or future or engaged in judgments and assessments about the quality of the attention. Researchers have also called this kind of attention *meta-attention* (Kornfeld, 1993) because, in a sense, it is attention to attention. In fact, mindfulness instructions direct practitioners to keep bringing awareness back to the present moment, and reflect on attention while attending, thus giving it a *meta* quality.

The focal point for attention can be narrow, as when attention is directed to breathing or to body sensations. It can also be broad, sometimes referred to as *open monitoring*, as in mindfulness, where attention is maintained on whatever is occurring in the present moment. Mindful attention is free to move to whatever emerges, and this skill, allowing attention to move flexibly, is a hallmark of mental health. When people are suffering from problems, attention often becomes stuck in redundant patterns of thought and emotion, out of step with what is actually happening, and thus unable to respond to the potential for something new that might be needed to solve the problem.

In both of these forms, attention is directed to *something*. But Zen includes another kind of meditation, also found in Daoism and Transcendental Meditation, a kind of attention that is directed to nothing—the empty moment without thought. This meditation is practiced by first noticing any objects that appear in the stream of consciousness, and then, letting them go. Usually, we are accustomed to thinking about something. Our consciousness is filled with thoughts, feelings, and sensations, along with our secondary interpretations and concepts about them. But the ability to focus on nothing can also be developed with time and practice if practiced correctly. We have had many clients tell us how surprised and pleased they were that they were able to learn these skills and sustain quiet moments without thought.

All three forms of meditation have healing benefits, as this chapter shows. Chapter 2 on neuroscience describes how these different ways of directing attention correlate with different patterns of brain activation. Each of these methods gives you a unique ability to work with your own consciousness, an invaluable skill for bringing therapeutic change.

### **Psychology of Emotions and How Meditation Affects Them**

One of our mentors, psychotherapy researcher Jerome D. Frank (1909–2005), said that psychotherapy takes place in the realm of meanings. We would add that psychotherapy also takes place in the realm of emotions and

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the meanings we give to them. In general, emotions can be thought to involve an elaborate signaling system, tuned both to the external world and to our internal experience. The evolutionary theory of emotions is that they are important for our survival. We have automatic reactions to situations that are threatening to us, which bring automatic responses of fear, sadness, anger, or disgust that move us to action for self-preservation (Williams, 2010). This evolutionary theory gives us a helpful partial picture, but it does not explain the human capacity for symbolic processing that allows us to assess the level of threat and reinterpret the situation more realistically.

***Labeling Emotions***

Researchers have proposed that affect labeling could be a key component in many mental disorders, and that therapy helps by intervening with this process. One study showed that mindfulness meditation affected the key areas of the brain that are involved with affect labeling, concluding that this may be how meditation, which radically alters the process of labeling, is helpful (Creswell, Way, Eisenberger, & Lieberman, 2007).

***Interpreting and Accepting Emotions***

For decades, psychology has been exploring the interaction between the interpretive process and the instinctual response, and much of modern cognitive therapies are based upon the important effects of attuning our instinctual emotions realistically to the world.

In recent years, a three-step process for dealing with emotions in psychotherapy has added mindfulness as a meaningful step. When people first feel an emotion, they experience arousal accompanied with certain body sensations. Therapy helps them to first become aware of these sensations and body experiences. Next, they identify, label, and appraise their emotions. Cognitive therapies help people take an objective look at what they are feeling and how they are conceptualizing and appraising their emotions. Finally, mindfulness offers a way to accept emotions without judgment. Awareness, along with acceptance of what is experienced just as it is, has been developed in acceptance and commitment therapy (ACT), (Hayes et al., 1999, 2004; Hayes & Feldman, 2004) and dialectical behavior therapy (DBT) (Linehan & Dimeff, 2001) to add an important mindfulness dimension that makes cognitive-behavioral treatments more effective and lasting. Making the

practice of meditation an integral part of the therapeutic process builds skills needed to regulate emotions well.

### *Regulating Emotions*

Emotional problems develop when people ignore or misinterpret the arousal, or if they do not find a way to come to terms with the emotions and their interpretations. Modern theories have conceived of such problems as involving the regulation of emotions. The process is often referred to as affect regulation to represent a brain-mind-body system of interaction of arousal and its successful management (see Chapter 7).

People regulate their emotions differently. For example, some people dissociate from their emotions by narrowing their perceptual field. Others have trouble noticing or even knowing what they feel. And of course, many people will avoid their feelings, especially when they are uncomfortable (Braboszcz, Habnousseau, & Delorme, 2010). The intensity varies as well, which means that some people experience emotions strongly and others only weakly. People take on certain attitudes and fears about their emotions, such as being afraid the emotion will never end, fearing that they will lose control, dreading the judgment of others, and worrying that the body sensations they feel could be a disease. These emotional styles often become expressed in the different psychological disorders we treat in therapy. In fact, most mental disorders have a component of these styles and attitudes toward emotions.

Meditation can help people develop a realistic and aware emotional adjustment that paves the way for healthy functioning. The methods offer helpful ways to intervene with all of these emotion disorder styles even when strong emotions emerge. The methods are not interpretive—in fact, forming judgments is something the meditator learns to set aside. Rather, experiencing is to be noticed, with awareness but without assessment. Secondary thoughts about the experience are also to be suspended. So, the usual conceptualizing that we typically do is put on hold. What people find is that through this acutely aware but nonjudgmental and nonconceptual experiencing, strong emotions are quieted, troubling feelings are frequently soothed, and balance is found.

The empty focus form of meditation helps people let go of stress and suffering, and in this way, emotional reactions ease of themselves. Much of the suffering that we have is self-induced, or at least, certainly adding intensity

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to an already difficult situation. Learning to be in the empty, open moment, new options and solutions emerge, leading to therapeutic change.

Researchers have found that meditation does indeed help people to better regulate their emotions (Lutz, Brefczynski-Lewis, Johnstone, & Davidson, 2008). We discuss these and other findings in Chapter 2, with their interesting effects on the brain.

## **EFFICACY RESEARCH**

Zen meditation brings enhancement of attention, better affect regulation, increased empathy, and compassion, along with overall feelings of calm. These skills are essential for being an effective therapist. A great deal of research has been done and is ongoing to test whether meditation added to treatment gives better outcomes. We offer a brief overview of some of these studies.

### **General Effectiveness**

Countless studies have shown that Zen offers effective treatment methods for a variety of psychological and psychiatric problems. For example, research has shown that mindfulness improves immune response and reaction to stress, while also giving a general feeling of well-being (Davidson et al., 2003). Another researcher investigated mindful learning (Langer, 1989) and found that mindful awareness improves learning ability. The capacity to learn is helpful in psychotherapy, during which we often encourage our clients to be open to learning something new.

### ***Enhancing Therapeutic Effectiveness***

Researchers have investigated whether therapists who practice Zen meditation may be more effective with their clients. In one study, psychotherapists in training were assigned to one of two groups: those who practiced mindfulness meditation, and those who did not. The meditating therapists in training received better evaluations for their work, and their clients had more symptom reduction. The study provides evidence that teaching meditation to therapists can lead to measurable improvement in their work (Grepmaier, Mitterlehner, Loew, Bachler, Rother, & Nickel, 2007). These findings make sense, since good psychotherapists need to be more open to their clients. It helps when we can be nonjudgmental of bad habits and negative emotions. Like the

lotus flower that blooms in a muddy pond, we find the early buds for potential change lying hidden in murky waters of psychological disturbance. Therapists are always trying to be aware, to notice even the smallest details that may help them better understand their clients. Zen meditation teaches these skills, and the skills can be learned and do improve with practice (see Chapter 2 for research).

### **Depression and Bipolar Disorder**

Researchers have done extensive research on how negative thinking affects mood. But another line of research turns that around and looks at how mood affects thinking. Teasdale (1983, 1988) induced a sad mood in subjects by playing sad music or reading a sad story. Those who had a history of depression were more deeply influenced than those without any depression in their background. Other researchers found that those suffering from major depression had reduced capacity to sustain positive emotions. This was reflected in reduced activation of the fronto-striatal brain pathways (Heller et al., 2009). This pathway connects the frontal lobe to the basal ganglia (motor areas) and receives inputs from neurotransmitters such as dopamine and serotonin, both involved in regulating moods.

Meditation has been shown to help the overreactivity to negative emotions found with depression and bipolar disorder. One theory about how meditation does so is based on the ability to become detached. Kabat-Zinn, one of the early researcher-clinicians to create therapeutic mindfulness programs, believes that meditation helps people put some distance between themselves and their sad thoughts and feelings (Kabat-Zinn, 2003). A recent study uncovered a possible mechanism of this process: the reduction of self-focus. Depressed individuals have an increase in self-focus. They tend to ruminate about themselves and their problems, and yet research shows that they are less capable of reappraising negative emotions than controls (Johnstone, van Reekum, Urry, Kalin, & Davidson, 2007; Ressler & Mayberg, 2007). This is reflected in more left-hemisphere activation in the language areas and lowered activation in somatosensory areas such as the parietal lobe, insula, and anterior cingulate, involved in the appraisal of emotion.

Mindfulness subjects expressed feeling sadness, but their brains responded differently. Attending to the present moment in mindfulness meditation showed distinct neural activity that changed how people responded to sad

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stimuli. Meditators had less activation of the left-hemisphere reappraisal areas of self-focus and a shift toward brain areas that correlate with sensory integration. Thus, the researchers concluded that meditators' brains were less involved in self-focus and more engaged in a somatosensory experience (Farb et al., 2010). Meditation may offer depressed individuals an alternative to simply trying to reinterpret their situations in a more realistic or positive way. They can use other parts of their brain instead that involve sensory awareness to shift the neural balance and start feeling better. Meditation brings feelings of well-being, which may help with recovery.

When combined with cognitive behavior therapy (CBT), meditation not only reduced depression, but it also prevented relapse. Researchers found that when mindfulness meditation was combined with cognitive therapy, patients who had suffered from three or more episodes of major depression reduced the risk of relapse from 66% to 37% (J. D. Teasdale et al., 2000). This study was replicated again several years later (Ma & Teasdale, 2004) and performed by other research groups (Michalak, Heidenreich, Meibert, & Schulte, 2008; J. D. Teasdale et al., 2000).

Clearly the research has shown that meditation is helpful for depression, stress, and anxiety. Bipolar disorder also includes periods of depression, stress, and anxiety, and so meditation in conjunction with CBT is becoming increasingly used for bipolar disorder. According to Harvard Medical International findings, mindfulness improves a number of factors involved in bipolar disorder, including decreasing medical symptoms of pain and high blood pressure, reducing anxiety and stress, improving sleep, enhancing the immune system's functioning, fostering self-awareness, increasing the ability to tolerate disturbing thoughts, and fostering feelings of well-being (Harvard Medical International, 2004).

### **Impulse Control and Substance Abuse**

Substance abuse disorders (SUD) are on the increase. We are always looking for treatments that clients can take with them and use when the craving strikes. Meditation offers helpful tools that can be used on the spot when most needed. The use of all the forms of meditation used in Zen, focus, mindfulness, and emptiness meditation, have been studied and found to help people overcome substance abuse.

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Stress is one of the by-products of substance abuse, and meditation training has been shown to help people reduce their stress, thereby making it easier to give up the harmful substance and handle withdrawal better. One study compared mindfulness training to empirically validated CBT for helping alcohol and cocaine abusers lower their stress and maintain their sobriety. The study found no differences between the groups, suggesting that meditation can be an effective treatment that helps recovering abusers keep their stress levels low (Brewer et al., 2009).

Mindfulness-based stress reduction programs have been used to help with addiction. One exemplary project (Bowen et al., 2006) taught Vipassana meditation, a form of mindfulness training, to subjects who were in jail. Upon their release, they had a significant reduction in their use of marijuana, crack cocaine, or alcohol as compared with those who had the typical treatments. They also had a decrease in psychiatric symptoms and an increase in an internal locus of control around the substance. They felt increased optimism as well.

Focused meditation has also been shown to help with substance abuse. In an impressively large study of more than 1,800 subjects, early researchers in meditation, Herbert Benson and Robert Wallace, showed that a form of focused meditation, transcendental meditation, was measurably helpful for overcoming substance abuse (Benson & Wallace, 1972).

Cravings are one of the difficult challenges that addicts need to overcome. Another factor involved in addiction is impulsivity. Focused meditation on breathing was shown to bring stronger activity in the prefrontal cortex and particularly in the attention areas of the anterior cingulate cortex and parts of the prefrontal cortex, which are involved in impulse control (Hotzel, 2007). These findings suggest that part of how meditation helps is that it enhances the ability to control impulses even when people are feeling strong cravings.

The different forms of meditation described in this book have been tested for relapse prevention. As therapists know, relapse is a difficult problem, and statistics show that around 40 to 60% of those treated for drug addiction will relapse (McLellan, Lewis, O'Brien, & Kleber, 2000). In fact, many abusers will relapse numerous times before quitting, or may even never quit. Witkiewitz, Marlatt, and Walker (2005) found support for mindfulness meditation as a treatment for preventing relapses for alcohol and substance abuse.

### **Anxiety, Fears, and PTSD**

The effectiveness of treating anxiety with meditation has been known for several decades (Kabat-Zinn et al., 1992). In more recent years, meditation has been tested with many different types of anxiety. As we know, one way to establish efficacy is to compare a new treatment with a proven method. A meditation-based stress management program was compared to an anxiety disorder education program as an adjunct to pharmacotherapy. The meditation group showed significant improvement in scores on all anxiety scales over the education group. These researchers concluded that meditation could be effective in relieving anxiety symptoms in patients with an anxiety disorder (Lee et al., 2007).

Mindfulness practice appears to be a promising alternative technique for social anxiety when individuals are too shy to seek help or as an adjunct to psychotherapy (Arana, 2006). Research on worry, one of the components of anxiety, indicated that detached mindfulness training helped to decrease worry-proneness (Sugiura, 2004).

A 20-week meditation-relaxation treatment program for elderly women suffering from anxiety and depression resulted in a measurable decrease in anxiety symptoms (DeBerry, 1982). Focus on breathing has been applied as a public intervention to alleviate posttraumatic stress disorder (PTSD) in survivors of mass disasters (R. P. Brown & Gerbarg, 2005).

Many studies have been done to determine why meditation is so helpful for anxiety. Anxiety and fear engage a wide range of neural circuits involving the hippocampus, amygdala, and the stress pathway (see the appendix for the details of the stress pathway). Researchers (Goleman & Goleman, 2001) suggest that meditation is effective because it helps to moderate the amygdala's emotional responses. The amygdala responds quickly with an emotion, whereas the prefrontal cortex takes slightly longer, acting as a thoughtful mediator of emotions. Since many studies have linked meditation to increased activity in the prefrontal cortex (see Chapter 2), skilled meditators may be able to intervene with the amygdala's split-second emotional response by providing a more constructive, realistic response.

Zen meditation teaches thinking without thinking, a paradoxical and yet helpful activity. One researcher found that the regular practice of Zen meditation helps reduce distracting thoughts. The study compared 12 people who had been meditating for 3 years with 12 novice meditators. All subjects were measured by functional magnetic resonance imaging (fMRI) while

meditating. The scans showed that the Zen meditators had different brain activity, particularly in what the researcher called a default network that activates when people have bursts of thoughts and mind wandering. The study concluded that regular practice of Zen meditation can reduce distracting thoughts and could be helpful with anxiety disorders, PTSD, and attention deficit/hyperactivity disorder (ADHD) (Pagnoni, Cekic, & Guo, 2008).

One interesting study analyzed the changes in electroencephalogram (EEG) using Zen meditation in association with trait anxiety assessed by Spielberg's State-Trait Anxiety Inventory. Research on meditation has consistently showed the dual effect (described in Chapter 2) of increased attention with increased relaxation. All 22 subjects showed the dual effect of meditation. Their EEG results also indicated the following correlation: Subjects with lower trait anxiety more readily induced meditation with a predominance of internalized attention, while subjects who had higher trait anxiety more readily induced meditation with a predominance of relaxation (Murata et al., 2004).

The effects of meditation on anxiety improve with time. Beginners who meditated for one month or less, short-term meditators who practiced from one month to two years, and long-term meditators who practiced for more than two years were compared. As the length of time meditating increased, attentional absorption increased while trait anxiety decreased (Davidson, Goleman, & Schwartz, 1976). Thus, the longer one engages in the practice, the larger the effect on anxiety.

But even brief meditation sometimes has an effect. One large study with 387 undergraduate students found that a single 20-minute session did result in reduced state anxiety after exposure to a transitory stressor (Rausch, Gramling, & Auerbach, 2006). Another study used a mindfulness-based stress reduction program over eight weeks. They found reduction in anxiety and related symptoms (Tory, 2004). So, even introducing a short course of meditation into your treatment of anxiety can be helpful.

## Relationships

Recent research has revealed that meditation increases empathy and benevolence, and therefore, meditation should be helpful for relationship therapy when these qualities are so vital for success. As we would expect, researchers have found that feelings of empathy are associated with meaningful relationships (Kerem, Fishman, & Josselson, 2001). But the link works both ways:

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When we feel compassion for others, we also feel better emotionally. The neurobiological studies of attachment show that having loving relationships is fundamental for our emotional health (Johnson, 2008). In a study using fMRI, researchers measured how experienced and novice meditators would respond to sounds that typically provoke an empathic response, such as the sounds of a laughing baby and a woman calling out in distress. The subjects also heard neutral sounds of background noise at a restaurant. Both groups showed greater brain activation during meditation than when not meditating in the areas that have been linked to empathy in the insula and cingulate cortices of the limbic region. During meditation, the activation in the insula was higher in experts when negative sounds were presented than when positive sounds were presented. These subjects also reported a deepening of their meditation when they heard the negative sounds. This study also made comparisons between meditation and states of rest between experts and novices. Their findings suggest that expert meditators were more capable of detecting emotional sounds than novices and that activation is higher while meditating than not (Lutz et al., 2008).

A study of a mindfulness-based meditation technique for couples therapy enhancement found that meditation favorably affected couples' satisfaction in their relationship, autonomy, relatedness, closeness, acceptance of each other, and relationship distress. Following treatment, the couples felt more optimism, spirituality, relaxation, and less psychological distress. They maintained the benefits after a 3-month follow-up (J. W. Carson, Carson, Gil, & Baucom, 2004). Another researcher performed a focus meditation for couples to "help heal and bring a greater depth, dimension and growth to a committed relationship." He found that both partners felt a closer and deeper bond following treatment (Shannahoff-Khalsa, 2006, p. 294).

## CONCLUSION

As we learn more about the psychology and efficacy of meditation through scientific investigation, we can refine our use of meditation for treatments. Research is helping to clarify that meditation works with attention, sensations, and affect to bring about targeted changes in thinking, emotions, and behavior, as well as facilitating a more generalized sense of well-being. New evidence is emerging every year, and so we can look forward to deepening our understandings over time.

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