

Close-Up on Complementary Care

Meditation as Medicine

Benefits Go Beyond Relaxation

BY LAWRENCE EDWARDS, PhD

The ancient practice of meditation has been scientifically studied for decades and the results are clear: Meditation is good medicine. The effects of meditation can influence the entire mind-body system. Clinical studies show that it can lower blood pressure, reduce blood cholesterol and cortisol, reduce the frequency of seizures, reduce fibromyalgia pain and the frequency and severity of headaches, improve sleep for patients with insomnia, improve heart rate variability and reduce arrhythmias, improve breathing in patients with asthma, and improve psoriasis symptoms.¹⁻¹¹ In epidemiologic studies, meditation has been associated with decreased use of inpatient and outpatient services.¹²

Meditation also has positive effects on psychological health, cognitive functioning and overcoming addictions.¹³ When I lecture to physicians about the health benefits of meditation, I show a slide that says: "If meditation were a pill with all these benefits and no negative side effects, and you didn't prescribe it for every patient, you might be liable for malpractice!" Meditation is particu-

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larly indicated for patients with stress-related disorders or any condition exacerbated by stress, such as chronic illness or pain, anxiety, depression, post-traumatic stress disorder, substance abuse or addiction and terminal illness. Institutions such as Memorial Sloan-Kettering Cancer Center in New York City routinely offer meditation instruction as a component of cancer care programs.¹⁴

A Unique State

Research has shown that meditation differs from simple relaxation or sleep.^{15,16} In meditation, oxygen consumption decreases to levels two to three times lower than that used in the deepest sleep, falling more quickly and rising back to resting levels as the meditator goes into and comes out of meditation.^{15,16} This means the body's level of arousal and metabolic rate drop further

than in deep sleep. In one study, an advanced meditator who was a yogi from India reduced his oxygen consumption to half of what was believed necessary to remain alive, yet returned to full consciousness when he ended the meditation and suffered no negative effects.¹⁶

Electroencephalographic (EEG) patterns for meditation also differ from those in sleep, with more alpha brainwave patterns being produced in meditation, indicating a level of alertness that is present in meditation but not during sleep.¹ Thus, the body enters a profoundly quiet state, yet the meditator is sufficiently alert to consciously enjoy it. Various areas of the brain show activity that corresponds to the mental focus and sense of timelessness and spaciousness that often accompany meditation.¹⁷ Andrew

Newburg, MD, of the University of Pennsylvania, has used SPECT scans to study brain activity during meditation. His research has documented increased activity in the frontal lobes of the brain during meditation, reflecting the increased focus used in many meditation techniques (Figure 1).¹⁷ He also documented a decrease in activity in the right parietal lobe of the brain that correlates with the sense of timelessness and spaciousness that is often reported as a part of the experience of meditation (Figure 2).¹⁷

Reduced autonomic nervous system arousal is a common feature of relaxation and meditation.^{13,15} This decreased arousal is related to many of the health benefits associated with meditation. Because the stress response exacerbates in reaction to many diseases and conditions — and is the primary factor in the genesis of many other illnesses — meditation is particularly effective as an aid to disease treatment. Herbert Benson, MD, the Harvard cardiologist who has extensively researched meditation and coined the phrase, “the relaxation response,” found that many relaxation and biofeedback techniques produce similar relaxation response phenomena related to lowered autonomic nervous system activity.¹⁵ However, researchers found that most people (70% to 100%) who learned to enter deep relaxation with biofeedback or other techniques quit using the technique, while only 20% to 30% of meditators quit.¹³

In my experience with training people in both methods, patients tend to find meditative practices more meaningful, richer and more deeply satisfying. Meditation becomes integrated into religious or spiritual beliefs, helping meditators sustain the practice. Benson referred to this as the “faith factor,” noting that it enhanced the positive effects of

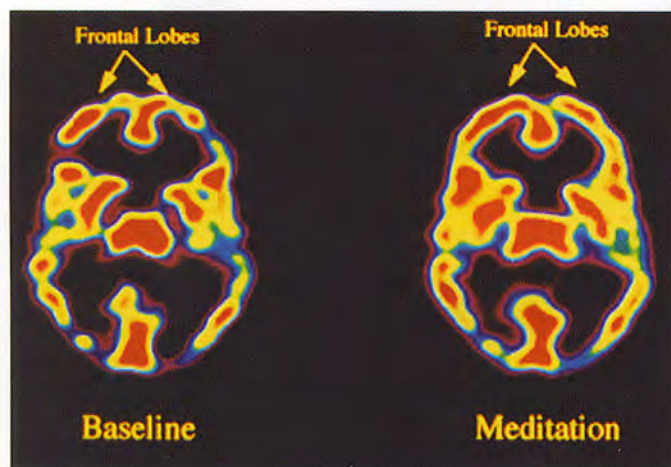


FIGURE 1
Brain activity during meditation, as shown on SPECT scan. Note the increased frontal lobe activity. Figures appear with permission from Andrew Newburg, MD

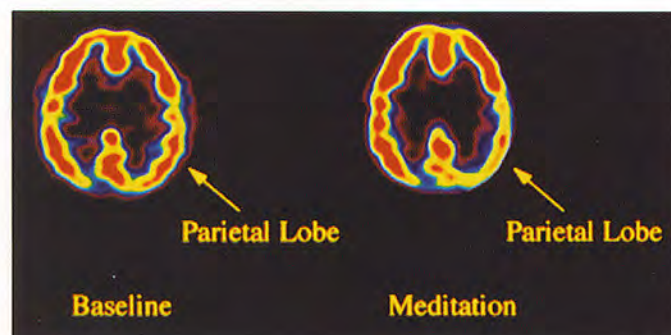


FIGURE 2
SPECT scan showing decreased parietal lobe activity during meditation.

meditation.¹⁸ Meditation groups, retreats, books, tapes and videos also are available to help patients maintain and deepen their practice. Since people are much more likely to continue doing meditation than biofeedback or relaxation techniques, it is the better clinical choice. For patients who have sought biofeedback training or stress management training and aren't familiar with meditation, I begin the training with biofeedback or relaxation techniques. This serves as an introduction to meditation techniques and the development of a home-based meditation practice.

Practice, Process, State

How does meditation make patients feel? Here's how a patient once described it to me, “I sit down after the kids go to school and begin my meditation practice with my eyes closed, saying the mantra. I've gradually extended the time I can sit to a half-hour. Over time I've

Start with a length of time that isn't too challenging, and gradually build it up to 20 to 30 minutes once or even twice per day.

seen how meditation has changed my life and I love when I get into that state of open stillness. I feel so free there!”

Her description encompasses the three essential components of meditation: practice, process and state. The *practice* of meditation refers to the technique — the actual physical and mental practices you do during meditation. There are countless meditation practices from different spiritual traditions. The use of breathing techniques, sacred words or mantras and specific sitting postures is common to many traditions. These practices allow the body to let go of tension and the mind to let go of thinking. As you explore different meditation techniques for yourself, you will identify which ones work best for you personally, as well as which will be useful to teach patients.

The *process* of meditation unfolds over time. Meditation is a transformational process.¹⁹ Meditation students regularly tell me that they experience positive physical, emotional, cognitive, behavioral, attitudinal and spiritual changes — as well as positive changes in their relationships with others. Scientific research focuses on the measurable aspects of these changes. Talking with patients about these documented benefits helps legitimize the practice and open their minds to investing the time and attention it takes to gain benefits from meditation.

Lastly, there is the *state* of meditation. Meditation is unique because it differs physiologically from the waking, dream and deep sleep states — and it gives access to who and what we are beyond our ordinary sense of self. The ability to do this develops out of the transformational *process* as the *practice* of meditation deconditions the mind and body, setting them free from countless habitual ways of acting and reacting. Habitual, conditioned responses are ingrained in our sense of self, which is taught to us by family and society and the roles we identify with at home and work.¹⁹ Much of how our mind-body system reacts to events, including the stress response, reflects this conditioning.

The state of meditation is the most subtle and difficult dimension of meditation to describe. It has been labeled, “beyond words,” “ineffable,” “a state of unity consciousness that is boundless” and “a state of extraordinary freedom.” Based on these experiences, meditation is often described as an innate state of liberation. This freedom can be accessed by anyone willing to practice it. For years I taught meditation to hypertensive inmates in a federal penitentiary. Inmates who regularly meditated were able to decrease their blood pressure and usually reduced or eliminated their medications. But what they most often found remarkable was the increased sense of freedom that meditation

created. After the weekly meditation group, one inmate with a violent history who frequently got into trouble with the guards told me he had actually apologized to a guard for what had happened earlier that day. He was stunned; he had never done that before. He had found the freedom to let go of his anger and act differently. Anger and hostility are leading risk factors for heart attacks.²⁰ Another inmate told me after some months of meditating that he felt freer than ever, even though he was in prison.

A terminally ill elderly man sought my help for pain management, and my work with him led to teaching him meditation. Although he took morphine, he said the only time he was truly pain-free was when he was meditating. Meditation opened the experience of an inner state of quietude and spaciousness beyond pain. Later his wife called to tell me how much meditation had helped him prepare to die.

Meditation Techniques

The ancient yogis believed that the length of our lives was determined by the number of breaths we take. The yogic tradition views breathing through the diaphragm and slowing down the breath as ways to extend life. A study published in the *British Journal of Medicine* determined that heart rate variability (HRV) increases when breath rate slows to an optimal six breaths per minute, and that the use of certain mantra and prayer techniques brought the breath rate into this optimal range, with the attendant increase in HRV and entrainment with the normal increase and decrease in heart rate (HR) that occur with inhalation and exhalation.²¹ This leads to greater cardiovascular health and a potentially longer life.²¹ So it appears the yogis were right: Practicing a slowed breath rate for periods of time, as in meditation using mantra and breathing, gives two components of the autonomic nervous system the best workout for flexibility. The sympathetic and parasympathetic nervous systems speed up the HR on inhalation and decrease it on exhalation. When the breath rate drops to six breaths per minute, this fluctuation in the HR is optimized.²¹

One of the easiest meditation methods to learn combines breathing and mantra repetition. A mantra is a sacred word or words used to focus and quiet the mind, leading you into meditation. "Om Namah Shivaya" is an ancient Sanskrit mantra from the yogic tradition that means, "I honor the divine within." Millions of people have used it for centuries to enter meditation. Coordinating the mantra repetition with the breath slows the breath rate down to the range of six breaths per minute, optimizing HRV.

Figure 3 shows a graphic display of fluctuations in heart rate as a person sits quietly for

10 minutes.²² You can see that the fluctuations are erratic and that the entrainment score, a measure of HRV coming into synchrony with the speeding up and slowing down of the HR that normally occurs with breathing, is low and never makes it into the zone of optimal synchronization. Figure 4 shows what happens when the person meditates by silently repeating, "Om Namah Shivaya" in rhythm with his breath.²² The wave-form becomes more regular, the entrainment score is nearly perfect, 98% high entrainment, and HRV is optimized into the slope of the zone immediately. It takes about 10 to 15 minutes to instruct a patient in this technique. Instructions are available on my Web site at www.thesoul-sjourney.com.

To experience this meditation technique yourself, find a place where you can sit quietly without interruptions. Sitting comfortably erect helps support alertness and open breathing. You can sit in a classic meditation posture, cross-legged on the floor, or in a chair with a straight back. People can also learn to meditate lying down if they aren't able to sit up. Over time, you will develop a meditation posture that works best for you.



Hatha yoga classes can help with posture and breathing. Set a timer for 10 to 20 minutes. Start by closing your eyes and bringing your attention to the movement of your breath. You might feel the breath coming in and out through your nose or focus on the movement of your diaphragm as you inhale and exhale. Breathe and relax, allowing your body to let go more and more with each breath. As your body lets go into more ease and comfort, your mind can begin to silently repeat, "Om Namah Shivaya." Coordinate it with your breathing by repeating "Om Namah Shivaya" once on inhalation and once on exhalation. Some people find it easier to repeat half the mantra, "Om Namah," on inhalation and "Shivaya" on exhalation. Continue to sit with eyes closed, focusing your attention on the mantra and your breath. When the mind wanders, as it invariably will, gently bring it right back to the breath and the mantra, without scolding yourself or your mind for losing focus. The mind learns to let go by repeatedly detaching from whatever comes up (images, thoughts, feelings, old habits, etc.) and coming back to rest on the breath and the mantra. This empowers your



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FIGURE 3

HRV recording of a person sitting quietly for 10 minutes. The erratic fluctuations in heart rate are reflected in the 84% low entrainment score. (All data obtained using FreezeFramer pulse monitor and software.)

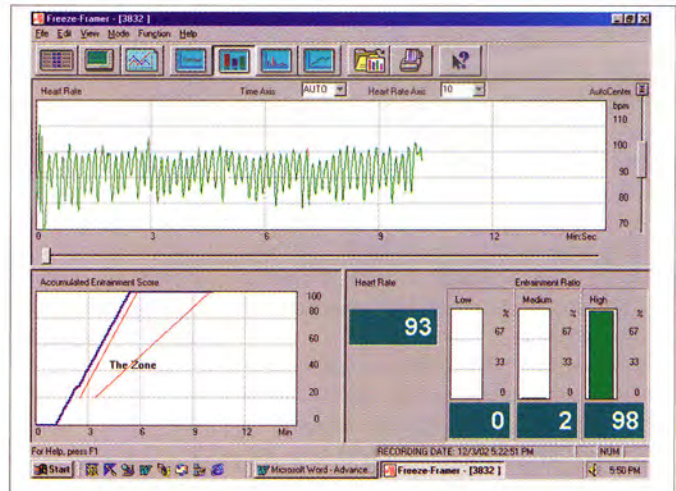


FIGURE 4

HRV recording of the same patient silently repeating "Om Namah Shivaya" in his mind in rhythm with breathing, once on inhalation, once on exhalation. This leads to the near perfect score of 98% high entrainment.

mind to "let go" more fully. Continue to repeat the mantra silently, over and over, letting go of the mind and its contents, repeatedly coming back to the breath and the mantra. Watch what happens. When the timer signals you to stop, take several slow, deep breaths, allowing your awareness to gently reorient to being awake and alert. Every time you sit to meditate, you are increasing the reservoir of meditative power that you can tap into during stressful or challenging moments.

It is best to develop a regular time and place for meditation. Start with a length of time that isn't too challenging, and gradually build it up to 20 to 30 minutes once or even twice per day. Begin with a frequency that is realistic, for example, commit to three times per week, stick to it for a month and then add another day. In this way, you can gradually integrate meditation into your daily routine.

After 32 years of practicing meditation, I continue to learn daily from what unfolds during those minutes spent seemingly doing nothing! As you meditate, the clarity, focus, high-quality attention and openness developed by meditation will benefit your patients even if they don't learn to meditate. Those whom you can teach meditation or motivate

to seek meditation instruction will gain access to previously untapped inner resources, whether it is the simple ability to deeply relax and let go, the ability to shift states of consciousness, or the mind-body's extraordinary ability to heal and self-regulate through meditation. Meditation is great medicine, and the source is within everyone. Whether you teach it or encourage the use of it, you will be offering the very best to your patients. ❖

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