

# Physician Guide to Mind-Body Research

**Your MIND is Your MEDICINE**

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- 1 GATEWAY**  
YOUR MIND IS THE LINK BETWEEN YOUR BODY AND SPIRIT. PLAYS A KEY ROLE IN YOUR HEALTH AND WELL-BEING.
- 2 BALANCE**  
YOUR MIND REGULATES YOUR BODY'S FUNCTIONING AND MAINTAINING ITS BALANCE.
- 3 EMOTIONS**  
YOUR THOUGHTS, FEELINGS & EMOTIONS POSITIVELY INFLUENCE TRIGGER THE RELEASE OF CHEMICALS THAT AFFECT EVERY CELL IN YOUR BODY.
- 4 STRESS**  
SHORT TERM STRESS HELPS YOU TO RUN ON FUEL. YOU CAN EASILY TRIGGER FROM THIS TEMPORARY STATE. IT IS HIGHLY PROTECTIVE.
- 5 DIS-EASE**  
CHRONIC STRESS IS A RISK FACTOR FOR HEART DISEASE, DIABETES, CANCER, HYPERTENSION, STROKE, AND MANY MORE DIS-ORDERS.
- 6 HEALING**  
POSITIVE EMOTIONS & OPTIMISM STIMULATE YOUR CELLS TO REPAIR AND SUSTAIN FUNCTIONING.
- 7 PLACEBO EFFECT**  
YOUR BRAIN'S POWER OF BELIEF CHANGES YOUR BRAIN AND CELLS TO ACTUALLY TRIGGER HEALING. IT'S POWERFUL ENOUGH TO CAUSE DRAMATIC IMPROVEMENTS, WHEN GIVEN PLACE DRUGS AND SURGERY.

*Good health is more than a body that works.*

*It is feeling good about yourself, dealing effectively with people and situations around you and growing spiritually toward a whole new sense of wholeness and meaning in life.*

*-Anonymous*

# Introduction

This white paper report was created by Elaine R. Ferguson, MD for to share with their treating physicians substantive information regarding the clinical efficacy of mind-body techniques.

It contains an overview of the peer-reviewed research studies that are the foundation of this program, with the hope that treating physicians will gain an insight into the scientific credibility of mind-body techniques and support their use.

Most physicians are unaware of the research findings, published in 1990 in the New England Journal of Medicine that there were more visits to alternative healers than to primary care MDs that year, and over two-thirds of people who did use alternative medical treatments did not tell their doctors about it.

Now that third party figures are paying for integrative and holistic medical therapies (especially naturopathic, chiropractic, and acupuncture services), allopathic physicians are increasing in the position of being able to refer people to alternative providers, and insurers are paying for services.

The components of the SuperHealing's mind-body approaches including meditation, visualization, positive psychology and others are gaining acceptance across the medical world.

It is my hope that you will use this report to encourage your patient's continuing use of these effective and safe techniques.

Thank you for your review and consideration,

Elaine R. Ferguson, MD

# Overview

Mind-body medicine focuses on the interactions among the brain, mind, body, and behavior, and on the powerful ways in which emotional, mental, social, spiritual, and behavioral factors can directly affect health. It regards as fundamental an approach that respects and enhances each person's capacity for self-knowledge and self-care, and it emphasizes techniques that are grounded in this approach.

Many Americans use complementary and alternative medicine, a group of diverse medical and health care systems, practices and products that are not presently considered to be a part of conventional medicine. According to the National Center for Complementary and Alternative Medicine (NCCAM), complementary medicine is used together with conventional medicine and alternative medicine is used in place of conventional medicine in pursuit of health and well-being.

Mind-body interventions constitute a major portion of the overall use of complementary and alternative medicine by the public. In 2002, mind-body techniques, including relaxation techniques, meditation, guided imagery (such as a series of verbal suggestions) used to guide another person or oneself in imagining sensations-especially in visualizing an image in the mind-to bring about a desired physical response (such as stress reduction), biofeedback, and hypnosis, were used by about 17 percent of the adult U.S. population.

The 2007 National Health Interview Survey (NHIS), which included a comprehensive survey of CAM use by Americans, showed that approximately 38 percent of adults use CAM.

Several mind-body approaches ranked among the top 10 CAM practices reported by adults in the 2007 NHIS. For example, the survey found that 12.7 percent of adults had used deep-breathing exercises, 9.4 percent had practiced meditation, and 6.1 percent had practiced yoga; use of these three CAM practices had increased significantly since the previous (2002) NHIS. Progressive relaxation and guided imagery were also among the top 10 CAM therapies for adults; deep breathing and yoga ranked high among children. Acupuncture had been used by 1.4 percent of adults and 0.2 percent of children.

An earlier study published in 2005, evaluated trends in the use of complementary and alternative medicine by American adults between 1997 and 2002, comparing data obtained from two national surveys of CAM use by US adults: (1) the Alternative Health/Complementary and Alternative Medicine supplement to the 2002 National Health Interview Survey (NHIS, N = 31,044) and (2) a 1997 national survey (N = 2055), each containing questions about 15 common CAM therapies.

The study reported complementary and alternative medicine (CAM) use by US adults increased substantially between 1990 and 1997, yet little is known about more recent trends.

The prevalence of CAM use has remained stable from 1997 to 2002. Over one in three respondents used CAM in the past year, representing about 72 million US adults.

This study found that mind–body therapies are commonly used by Americans: almost 1 in 5 adults reported using 1 or more mind–body therapies in 2002.

Relaxation techniques was the second most commonly used CAM modalities in 2002, by 14.2%, representing 29 million US adults. Herbal therapy was number one, 18.6%, representing over 38 million US adults. Overall CAM use for the 15 therapies common to both surveys was similar between 1997 and 2002 (36.5%, vs. 35.0%, respectively, each representing about 72 million US adults.

## **What is Mind-Body Medicine?**

Mind-body medicine encompasses a broad range of techniques and practices designed to support and enhance the mind’s ability to impact health and well-being. Based on national survey data, relaxation techniques, guided imagery, hypnosis and biofeedback are the most commonly used mind-body therapies in the United States. Many of these therapies have a history that preceded conventional medicine by several millennia. During the last three decades they have received increased attention as biomedical research identifies mechanism by which the body and mind influence each other.

Mind-body medicine typically focuses on intervention strategies that are thought to promote health, such as relaxation, hypnosis, visual imagery, meditation, A conscious mental process using certain techniques—such as focusing attention or maintaining a specific posture—to

suspend the stream of thoughts and relax the body and mind., yoga, a practice from Ayurvedic medicine that combines breathing exercises, physical postures, and meditation. It is intended to calm the nervous system and balance the body, mind, and spirit.

Mind-body medicine views illness as an opportunity for personal growth and transformation and health care providers as catalysts and guides in this process.

Certain mind-body intervention strategies are well integrated into conventional care and, while still considered mind-body interventions, are not viewed as complementary and alternative medicine.

The concept that the mind is important in the treatment of illness is integral to the healing approaches of traditional Chinese medicine and Ayurvedic medicine, a whole medical system that originated in India over 2,000 years old that integrates the body, mind and spirit to prevent and treat disease.

Hippocrates also noted the moral and spiritual aspects of healing and believed that treatment could occur only with consideration of attitude, environmental influences, and natural remedies. He believed that treatment could occur only with consideration of attitude, environmental influences, and natural remedies (ca. 400 B.C.).

While this integrated approach was maintained in traditional healing systems in the East, developments in the Western world by the 16th and 17th centuries led to a separation of human spiritual or emotional dimensions from the physical body. This separation began with the redirection of science, during the Renaissance and Enlightenment eras, to the purpose of

enhancing humankind's control over nature.

Technological advances (e.g., microscopy, the stethoscope, the blood pressure cuff, and refined surgical techniques) demonstrated a cellular world that seemed far apart from the world of belief and emotion. The discovery of bacteria and, later, antibiotics further dispelled the notion of belief influencing health. Fixing or curing an illness became a matter of science (i.e., technology) and took precedence over, not a place beside, healing of the soul.

As medicine separated the mind and the body, scientists of the mind (neurologists) formulated concepts, such as the unconscious, emotional impulses, and cognitive delusions, that solidified the perception that diseases of the mind were not "real," that is, not based in physiology and biochemistry.

In the 1920s, Walter Cannon's work revealed the direct relationship between stress and neuroendocrine responses in animals. Coining the phrase "fight or flight," Cannon described the primitive reflexes of sympathetic and adrenal activation in response to perceived danger and other environmental pressures (e.g., cold, heat). Hans Selye further defined the deleterious effects of stress and distress on health.

At the same time, technological advances in medicine that could identify specific pathological changes, and new discoveries in pharmaceuticals, were occurring at a very rapid pace. The disease-based model, the search for a specific pathology, and the identification of external cures were paramount, even in psychiatry.

During World War II, the importance of belief reentered the web of health care. On the beaches

of Anzio, morphine for the wounded soldiers was in short supply, and Henry Beecher, M.D., discovered that much of the pain could be controlled by saline injections. He coined the term "placebo effect," and his subsequent research showed that up to 35 percent of a therapeutic response to any medical treatment could be the result of belief. Investigation into the placebo effect and debate about it are ongoing.

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Mind-body medicine typically focuses on intervention strategies that are thought to promote health, such as relaxation, hypnosis, visual imagery, meditation, a conscious mental process using certain techniques—such as focusing attention or maintaining a specific posture—to suspend the stream of thoughts and relax the body and mind.

The field views illness as an opportunity for personal growth and transformation and health care providers as catalysts and guides in this process.

Certain mind-body intervention strategies listed here, such as group support for cancer survivors, are well integrated into conventional care and, while still considered mind-body interventions, are not considered to be complementary and alternative medicine.



Mind-body interventions constitute a major portion of the overall use of complementary and alternative medicine by the public. In 2002, mind-body techniques, including relaxation techniques, meditation, guided imagery Any of various techniques (such as a series of verbal suggestions) used to guide another person or oneself in imagining sensations—especially in visualizing an image in the mind—to bring about a desired physical response (such as stress reduction), biofeedback, and hypnosis, were used by about 17 percent of the adult U.S. population. Prayer was used by 45 percent of the population for health reasons.

Mind-body medicine uses a variety of techniques designed to enhance the mind's capacity to affect bodily function and symptoms. Some techniques that were considered CAM in the past have become mainstream (for example, patient support groups and cognitive-behavioral therapy). Other mind-body techniques are still considered CAM, including meditation A conscious mental process using certain techniques—such as focusing attention or maintaining a specific posture—to suspend the stream of thoughts and relax the body and mind., prayer, mental healing, and therapies that use creative outlets such as art, music, or dance.

#### Mind-Body Interventions and Disease Outcomes

Over the past 20 years, mind-body medicine practices that focus on the interactions among the brain, mind, body, and behavior, with the intent to use the mind to affect physical functioning and promote health. Examples include meditation and yoga, journaling, guided imagery, cognitive behavioral therapy.

Research has provided considerable evidence that psychological factors can play a substantive role in the development and progression of coronary artery disease. There is evidence that mind-body interventions can be effective in the treatment of coronary artery disease, enhancing the effect of standard cardiac rehabilitation in reducing all-cause mortality and cardiac event recurrences for up to 2 years.

Mind-body interventions have also been applied to various types of pain. Clinical trials indicate that these interventions may be a particularly effective adjunct in the management of arthritis, with reductions in pain maintained for up to 4 years and reductions in the number of physician visits.

When applied to more general acute and chronic pain management, headache, and low-back pain, mind-body interventions show some evidence of effects, although results vary based on the patient population and type of intervention studied.

Evidence from multiple studies with various types of cancer patients suggests that mind-body interventions can improve mood, quality of life, and coping, as well as ameliorate disease- and treatment-related symptoms, such as chemotherapy-induced nausea, vomiting, and pain.<sup>8</sup>

Some studies have suggested that mind-body interventions can alter various immune parameters, but it is unclear whether these alterations are of sufficient magnitude to have an impact on disease progression or prognosis.

## Mind-Body Influences on Immunity

There is considerable evidence that emotional traits, both negative and positive, influence people's susceptibility to infection. Following systematic exposure to a respiratory virus in the laboratory, individuals who report higher levels of stress or negative moods have been shown to develop more severe illness than those who report less stress or more positive moods.<sup>11</sup>

Recent studies suggest that the tendency to report positive, as opposed to negative, emotions may be associated with greater resistance to objectively verified colds. These laboratory studies are supported by longitudinal studies pointing to associations between psychological or emotional traits and the incidence of respiratory infections.<sup>12</sup>

## Meditation and Imagery

Meditation, one of the most common mind-body interventions, is a conscious mental process that induces a set of integrated physiological changes termed the relaxation response.

Functional magnetic resonance imaging (fMRI) has been used to identify and characterize the brain regions that are active during meditation.

This research suggests that various parts of the brain known to be involved in attention and in the control of the autonomic nervous system are activated, providing a neurochemical and anatomical basis for the effects of meditation on various physiological activities.<sup>13</sup> Recent studies involving imaging are advancing the understanding of mind-body mechanisms.

For example, meditation has been shown in one study to produce significant increases in left-sided anterior brain activity, which is associated with positive emotional states. Moreover, in this same study, meditation was associated with increases in antibody titers to influenza vaccine, suggesting potential linkages among meditation, positive emotional states, localized brain responses, and improved immune function.<sup>14</sup>

## Physiology of Expectancy (Placebo Response)

Placebo effects are believed to be mediated by both cognitive and conditioning mechanisms. Until recently, little was known about the role of these mechanisms in different circumstances. Now, research has shown that placebo responses are mediated by conditioning when unconscious physiological functions such as hormonal secretion are involved, whereas they are mediated by expectation when conscious physiological processes such as pain and motor performance come into play, even though a conditioning procedure is carried out.

Positron emission tomography (PET) scanning of the brain is providing evidence of the release of the endogenous neurotransmitter dopamine in the brain of Parkinson's disease patients in response to placebo.

Evidence indicates that the placebo effect in these patients is powerful and is mediated through activation of the nigrostriatal dopamine system, the system that is damaged in Parkinson's disease. This result suggests that the placebo response involves the secretion of dopamine, which is known to be important in a number of other reinforcing and rewarding

conditions, and that there may be mind-body strategies that could be used in patients with Parkinson's disease in lieu of or in addition to treatment with dopamine-releasing drugs.

## Surgical Preparation

Mind-body interventions are being tested to determine whether they can help prepare patients for the stress associated with surgery. Initial randomized controlled trials—in which some patients received audiotapes with mind-body techniques (guided imagery, music, and instructions for improved outcomes) and some patients received control tapes—found that subjects receiving the mind-body intervention recovered more quickly and spent fewer days in the hospital.

Behavioral interventions have been shown to be an efficient means of reducing discomfort and adverse effects during percutaneous vascular and renal procedures. Pain increased linearly with procedure time in a control group and in a group practicing structured attention, but remained flat in a group practicing a self-hypnosis technique. The self-administration of analgesic drugs

was significantly higher in the control group than in the attention and hypnosis groups.

Hypnosis also improved hemodynamic stability.

## Conclusion

Evidence from randomized controlled trials and, in many cases, systematic reviews of the literature, suggests that:

- Mechanisms may exist by which the brain and central nervous system influence immune, endocrine, and autonomic functioning, which is known to have an impact on health.
- Multicomponent mind-body interventions that include some combination of stress management, coping skills training, cognitive-behavioral interventions, and relaxation therapy may be appropriate adjunctive treatments for coronary artery disease and certain pain-related disorders, such as arthritis.
- Multimodal mind-body approaches, such as cognitive-behavioral therapy, particularly when combined with an educational/informational component, can be effective adjuncts in the management of a variety of chronic conditions.
- An array of mind-body therapies (e.g., imagery, hypnosis, relaxation), when employed presurgically, may improve recovery time and reduce pain following surgical procedures.
- Neurochemical and anatomical bases may exist for some of the effects of mind-body approaches.

Mind-body approaches have potential benefits and advantages. In particular, the physical and emotional risks of using these interventions are minimal. Moreover, once tested and

standardized, most mind-body interventions can be taught easily. Finally, future research focusing on basic mind-body mechanisms and individual differences in responses is likely to yield new insights that may enhance the effectiveness and individual tailoring of mind-body interventions. In the meantime, there is considerable evidence that mind-body interventions, even as they are being studied today, have positive effects on psychological functioning and quality of life, and may be particularly helpful for patients coping with chronic illness and in need of palliative care.

## Summary of Significant Research Studies:

An electronic search was undertaken of the MEDLINE, PsycLIT, and the Cochrane Library databases, and a manual search of the reference sections of relevant articles for related clinical trials and reviews of the literature. Studies examining mind-body interventions for psychological disorders were excluded. Owing to space limitations, studies examining more body-based therapies, such as yoga and tai chi chuan, were also not included. Data were extracted from relevant systematic reviews, meta-analyses, and randomized controlled trials.

Results; Drawing principally from systematic reviews and meta analyses, there is considerable evidence of the efficacy for several mind-body therapies in the treatment of coronary artery disease (eg, cardiac rehabilitation, headaches, insomnia, incontinence, chronic low back pain, disease and treatment related symptoms of cancer, and improving postsurgical outcomes. We found moderate evidence of efficacy for mind-body therapies in the areas of hypertension and arthritis. Additional research is required to clarify the relative efficacy of different mind-body therapies, factors (such as specific patient characteristics) that might predict more or less successful outcomes, and mechanisms of action. Research is also necessary to examine the cost offsets associated with mind-body therapies.

There is now considerable evidence that an array of mind-body therapies can be used as effective adjuncts to conventional medical treatment for a number of common clinical conditions.

## SuperHealing Core Components

### Relaxation Techniques

Relaxation techniques include those practices whose primary stated goal is elicitation of a psychophysiological state of relaxation or hypoarousal. In certain practices, the goal might be to reduce muscle tension (as in progressive muscle relaxation) in which muscles are alternatively tensed and relaxed). In other cases the primary goal is to achieve a hypometabolic stated of reduced sympathetic arousal. The most prominent example of the latter is Dr.



Herbert Benson's relaxation response.

### **Meditation**

Meditation has been defined as the “intentional self-regulation of attention” a systematic mental focus on particular aspects of inner or outer experience. Unlike many other approaches in behavioral medicine (eg., biofeedback, relaxation strategies) most meditation practices were developed within a religious or spiritual context and held as their ultimate goal of some type of spiritual growth, personal transformation, or transcendental experience, it has been argued that as a health care intervention, meditation can be taught and used effectively regardless of a patient's cultural or religious background. The two most extensively researched forms are transcendental meditation in which practitioners repeat a silent word or phrase (a mantra) with the goal of quietly and ultimately transcending the ordinary stream of internal mental dialogue and mindfulness meditation in which practitioners simply observe or attend to (without

judgment), thoughts, emotions, sensations, perceptions, etc., as they arise moment by moment in the field of awareness.

Meditation refers to a group of techniques, most of which started in Eastern religious or spiritual traditions. In meditation, a person learns to focus his attention and suspend the stream of thoughts that normally occupy the mind. This practice is believed to result in a state of greater physical relaxation, mental calmness, and psychological balance. Practicing meditation can change how a person relates to the flow of emotions and thoughts in the mind.

### **Guided Imagery**

Guided imagery involves the generation (either by oneself or guided by a practitioner) of different mental images. Using the capacities of visualization and imagination, individuals evoke images usually either sensory or affective. These images are typically visualized with the goal of evoking a psychophysiological state of relaxation or with some specific outcome in mind (e.g. visualizing one's immune system attacking cancer cells, imaging oneself feeling health and well, exploring subconscious themes, etc.).

A mental image can be defined as “a thought with sensory qualities.” It is something we mentally see, hear, taste, smell, touch, or feel.

The term “guided imagery” refers to a wide variety of techniques, including simple visualization and direct suggestion using imagery, metaphor and story-telling, fantasy exploration and game playing, dream interpretation, drawing, and active imagination where elements of the unconscious are invited to appear as images that can communicate with the conscious mind.

Guided imagery involves a series of relaxation techniques followed by the visualization of detailed images, usually calm and peaceful in nature. If used for treatment, the individual will visualize their body free of the specific problem or condition. Sessions are typically 20 to 30 minutes in length, and may be practiced several times a week.

Once considered an “alternative” “or complementary” approach, guided imagery is now finding widespread scientific and public acceptance, and it is being used to teach psychophysiological relaxation, alleviate anxiety and depression, relieve physical and psychological symptoms, overcome health-endangering habits, resolve conflicts, and help patients prepare for surgery and tolerate procedures more comfortably.

Mental images, formed long before we learn to understand and use words, lie at the core of who we think we are, what we believe the world is like, what we feel we deserve, what we think will happen to us, and how motivated we are to take care of ourselves. These images strongly influence our beliefs and attitudes about how we fall ill, and what will help us to get better.

In the early 1970s, inspired by the pioneering work of Irving Oyle, Carl and Stephanie Simonton,

Robert Assagioli and others, Drs. David Bresler and Martin Rossman began to develop and research contemporary imagery approaches for patients coping with chronic pain, immune dysfunction, cancer, heart disease, and other catastrophic and life-threatening illnesses. Teaching clients to use their own imagination in this interactive way results in a remarkably empowering approach that shortens overall treatment time without sacrificing the depth and emotion so central to therapeutic growth.

Since imagery is the dominant natural language of the unconscious, the clinical applications of imagery for resolved psychological issues are boundless. Imagery is an extremely powerful, yet remarkably safe and rapid therapeutic approach for mobilizing the untapped healing resources of the mind.

### **Writing and Health-Journaling**

Journaling is a term coined for the practice of keeping a diary or journal that explores thoughts and feelings surrounding the events of one's life. Journaling, as a stress management and self-exploration tool, is not the same as simply recording the happenings in one's life, like keeping a log. To be most helpful, one must write in detail about feelings and cognitions related to stressful events, as one would discuss topics in therapy.

Journaling allows people to clarify their thoughts and feelings, thereby gaining valuable self-knowledge. It's also a good problem-solving tool; oftentimes, one can hash out a problem and come up with solutions more easily on paper. Journaling about traumatic events helps one process them by fully exploring and releasing the emotions involved, and by engaging both

hemispheres of the brain in the process, allowing the experience to become fully integrated in one's mind.

As for the health benefits of journaling, they've been scientifically proven. Research shows the following:

- It improves cognitive functioning.
- It strengthens the immune system, preventing a host of illnesses.
- It counteracts many of the negative effects of stress.
- Journaling decreases the symptoms of asthma, arthritis, and other health conditions.

### **Positive Emotions**

#### **Cultivating Positive Emotions To Optimize Health and Well-Being**

Researcher Dianne Hales described a person as emotionally healthy as someone who exhibited flexibility and adaptability to different circumstances, had a sense of meaning and affirmation in life as well as an "understanding that the self is not the center of the universe", had compassion and the ability to be unselfish, along with increased depth and satisfaction in intimate relationships, and who had a sense of control over the mind and body.[29]

A growing body of data ties negative and positive emotional states to wellness or ill health. The negative emotions have a damaging impact on the immune system and on health in general; this has been found true for depression, hostility and anger, and for anxiety, as well as for negative perspectives including pessimism and cynicism, guilt, hopelessness and helplessness.

Also, repression, the denial of negative feeling, is unhealthy. The adverse effects on health range from raising blood pressure and increasing the risk of heart disease, cancer, and viruses. On the other hand, positive emotions strengthen immune function and bring good health. This has been shown for states of happiness, calm and relaxation, compassion, as well as attitudes such as hope, optimism, trust, and being in control.

There is a role for cultivating beneficial emotions in treating diseases such as cancer, which are less related to stress in origin. The main technique used in this way is based on mindfulness meditation. It is used with medical patients suffering a wide range of illness, from kidney disease and AIDS to diabetes and lung disease. In patients with chronic and serious disease, mindfulness offers a way for patients to develop an awareness that is less prone to being swayed by emotionality. As a medical intervention, it has proven effective in helping alleviate symptoms and facilitate healing. Cultivating calmness and mindfulness helps relieve the suffering of people with chronic disease. Learned optimism

Learned optimism is the idea that a talent for joy, like any other, can be cultivated. It is contrasted with learned helplessness. Learning optimism is created by consciously challenging self-talk if it describes a negative event as a personal failure that permanently affects all areas of the person's life.

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