

Meditation and Mind/Body Medicine

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Objectives

- **To understand the scientific research and events that led to the development of the field of Mind/Body Medicine.**
- **To understand the variety of meditative practices, free of dogma and ritual.**
- **To understand how meditative practices are an integral part of Mind/Body Medicine, and clinical applications of meditative practices.**

The Gates Of Paradise

A soldier named Nobushige came to Hakuin, and asked:
"Is there really a paradise and a hell?"

"Who are you?" inquired Hakuin. "I am a samurai," the warrior replied.
"You, a soldier!" exclaimed Hakuin.
"What kind of ruler would have you as his guard?
Your face looks like that of a beggar."

Nobushige became so angry that he began to draw his sword,
but Hakuin continued: "So you have a sword!
Your weapon is probably much too dull to cut off my head."

As Nobushige drew his sword Hakuin remarked:
"Here open the gates of hell!"
At these words the samurai, perceiving the master's discipline,
sheathed his sword and bowed.
"Here open the gates of paradise," said Hakuin.

From: ZEN FLESH, ZEN BONES By: Paul Reps



Don't Ask

The Mind-Body Connection

Summarized from The Healer Within
By: Steven Locke, M.D.

1939

Dr. Franz Alexander, psychiatrist in Chicago, IL

**“Father of Psychosomatic Medicine”
Defined the “Psychosomatic Seven”:**

- Peptic ulcer disease
- Ulcerative colitis
- Hypertension
- Hyperthyroidism
- Rheumatoid arthritis
- Asthma
- Neurodermatitis

1930s through 1940s

**Dr. Walter Cannon
Physiologist at Harvard Medical School**

**Mapped out the neuronal pathway
from the brain
to the adrenal medulla**

1960s

Doctors at NASA

**Discovered that white blood cell counts
decreased in astronauts during the
physical and psychological stress
of re-entry to Earth**

Australian Researchers

**Studied immune functioning in 26
individuals whose spouses had
recently died**

Discovered decreased immune functioning

**Suggested an effect of emotions on
the immune system**

**Numerous studies have
demonstrated that
lesions in the
hypothalamus affect
the immune system**

**Detailed nerve mapping research
has revealed the infiltration
of the nervous system
into important parts of the
immune system:**

**Bone marrow
Thymus
Spleen
Lymph nodes**

Other significant findings:

- **Endorphins secreted by the brain have immunosuppressive or immunoenhancing effects**
- **Active lines of communication exist between the brain and the immune system**
- **Epinephrine decreases immune functioning**
- **Corticosteroids decrease immune functioning**

Hans Selye

Organic chemist at McGill University, Canada

- **Helped map out the hormonal component to the stress response**
- **Defined the Hypothalamic-Pituitary-Adrenocortical Axis**
- **Demonstrated that the thymus glands of stressed rats had withered and shrunk**

Mid-1970s

Dr. Robert Ader, a psychologist at the University of Rochester, NY

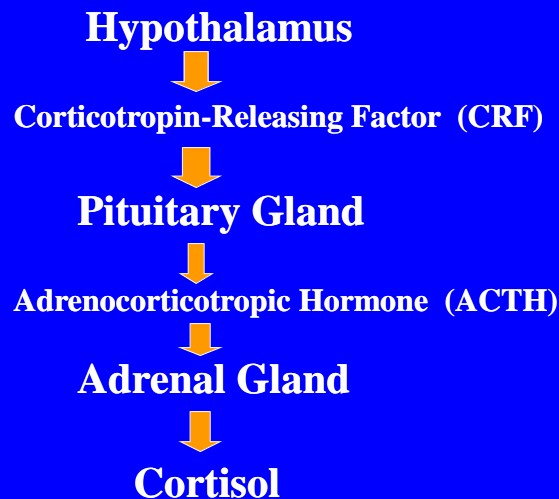
- **Was experimenting with Pavlovian conditioning**
- **Teach rats an aversion to saccharin-flavored water**
- **Rats would drink sweet water, then be injected with cyclophosphamide, which made them nauseous**
- **Unexpectedly, many of the rats died**
- **Found to be secondary to the immunosuppressive effects of cyclophosphamide**

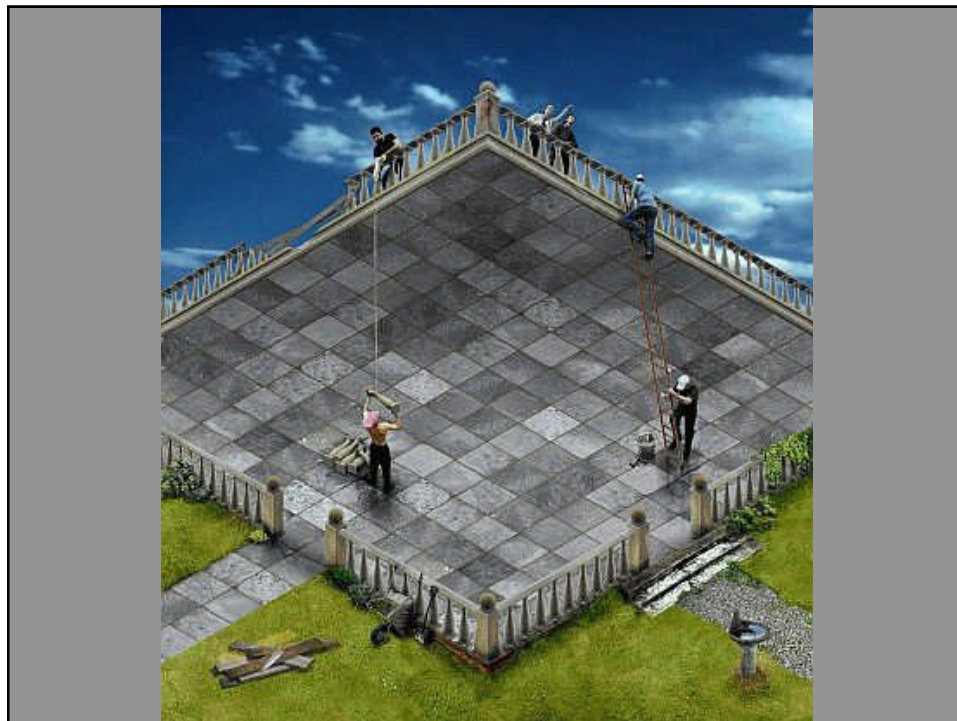
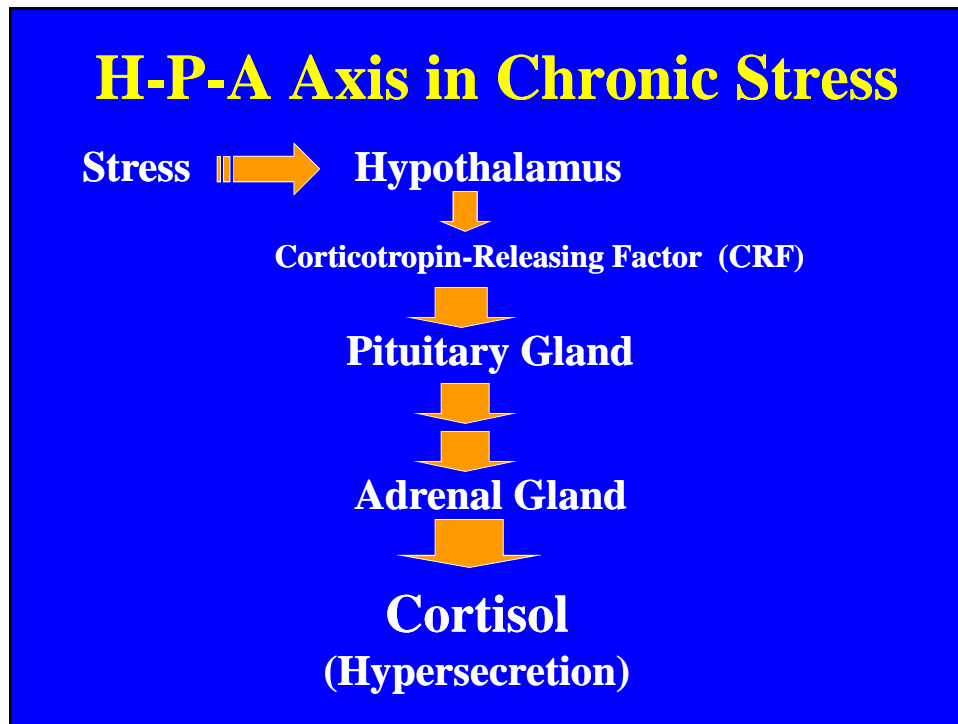
Dr. Robert Ader

- After pairing one injection of cyclophosphamide with “sweet water”, it was discovered that the rats would suppress their immune system with any future drinks of “sweet water” alone
- These immunosuppressed rats also demonstrated increased resistance to certain autoimmune diseases
- Dr. Ader coined the term:

PsychoNeuroImmunology

Hypothalamic-Pituitary-Adrenal Axis





Meditation

*“If you give a person a fish they will
have food for a day.
If you teach a person to fish they will
have food every day.”*

- an old Chinese proverb -

**The art and science of meditation
is over 4000 years old.**

**It has become an integral part of
all religions and spiritual practices
in various forms.**

**By 1988 there were over 1400 publications
in the Western medical literature.***

*Based on textbook by: Murphy, M. and Donovan, S. (1988).
The Physical and Psychological Effects of Meditation.
Esalen Institute Study Of Exceptional Functioning; San Rafael, CA.

*This number has likely greatly increased, as this textbook was updated and republished by
the Inst of Noetic Sciences; 2 ed edition (June 1997): *The Physical and Psychological Effects of
Meditation: A Review of Contemporary Research With a Comprehensive Bibliography, 1931-
1996.* Murphy M, Donovan S, and Taylor E.*

September 2010 Online search of “PubMed.gov”

Search term	Number of articles found
Mindfulness Based Cognitive Therapy	734
Mindfulness Meditation	456
Mindfulness Based Stress Reduction	204
Mindfulness Meditation AND Brain	73

Meditation

Two subtypes:

**Concentration
&
Mindfulness**

Concentration Meditation

- **Early stage of meditation**
- **Develops focus and attention**
- **Selecting a single object to focus upon**
 - **The breath**
 - **A prayer**
 - **A mantra**
 - **A single object**

Mindfulness Meditation

- “Paying attention, on purpose, in the present moment, in the service of self-understanding”*
- Need a solid foundation in concentration first
- Observe oneself without judgment
- Observe oneself without justification
- Defenses are lowered as this progresses

*Kabat-Zinn, J. (1990) *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain and Illness*. New York: Delacorte Press.
Kabat-Zinn, J. (1994) *Wherever You Go There You Are: Mindfulness Meditation in Everyday Life*. New York: Hyperion.

The “Relaxation Response”

- Defined in the early 70's by Dr. Herbert Benson, a cardiologist at Harvard Medical School
- Shown to be an effective anti-stress tool
- He had studied practitioners of TM who had effectively controlled their hypertension through the practice of this form of concentration meditation

Benson, H. [The Relaxation Response](#)

Stages of Meditation Practice

- 1. Preliminary Practices**
- 2. Access Concentration**
- 3. Sustained Concentration**
- 4. Insight**

Benefits of Concentration Meditation

- **Decrease Heart Rate**
- **Decrease Blood Pressure**
- **Decreased Oxygen consumption**
- **Decreased CO2 elimination**
- **Decreased respiratory rate**
- **Decreased muscle tension**
- **Decreased cortisol levels**
- **Increased skin resistance**
- **EEG studies-increased alpha rhythms**
- **EEG hemispheric synchronization**

Perceptual Changes

Dan Brown, Ph.D. studied meditators on a 3 month retreat averaging 16 hours of meditation per day.

Control group was staff at the retreat center.

Meditators showed a significant improvement in the ability to detect shorter single light flashes and required a shorter interval to differentiate between successive flashes correctly.

Wilber, K., Engler, J., & Brown, D. (1986) *Transformations Of Consciousness*. Boston: New Science Library.

Discoveries from neuroimaging:

“Regular mindfulness practice has been shown to increase cortical thickness in areas associated with attention, interoception, and sensory processing, such as the prefrontal cortex and right anterior insula.”*

“Amygdala responses: Mindfulness improves affect regulation by optimizing prefrontal cortex regulation of the amygdala.”*

*Lau M, Grabovac A. Mindfulness-Based Interventions: Effective for depression and anxiety. *Current Psychiatry*. 2009; 8 (12): 39-55.



Some days all you can do is smile and wait for some kind soul to come pull your ass out of the bind you've gotten yourself into.

Mind/Body Medicine

Placebo Effect

- **One of Medicine's best kept secrets**
- **No matter what you do to a patient, 33% will respond as well to a placebo as to an actual treatment**
- **It appears that when the "mind" believes that it is being treated for a condition, that simply the belief that a treatment is being implemented is enough in one third of patients for their condition to improve**

Clinical Hypnosis

- **You are feeling sleepy**
- **This is a good lecture**
- **Hypnosis has been shown to eliminate warts**
- **The medical literature is full of examples of the clinical use of hypnosis ranging from pain management to surgery without anesthesia**
- **Milton Erickson, M.D. = the father of modern medical hypnosis**

Chronic Pain

- 225 chronic pain patients were evaluated after an 8 week SRRP and followed up to 48 months
- After the 8 week intervention there were significant decreases in:
 - present moment pain
 - negative body image
 - inhibition of activity by pain
 - Anxiety and depression
 - pain med use
- These gains were maintained for 48 months, with the exception of present moment pain

Kabat-Zinn, J., et.al., (1986). *Clinical Journal of Pain*, 2: 159-173.

Kabat-Zinn, J., et. al. (1985) *Journal of Behavioral Medicine*,8: 163-190.

Medical Utilization

- Five years of medical insurance utilization was compared between 2,000 TM practitioners and 600,000 members of the same insurance carrier
- Meditators demonstrated:
 - Inpatient days down 69% (over age 40)
 - Outpatient visits down 74% (over age 40)
 - Hospital admissions:
 - down 55% for benign & malignant tumors
 - down 87% for heart disease
 - down 30% for infectious disease
 - down 31% for "mental disorders"
 - equal for childbirth

Orme-Johnson, D., (1987) *Psychosomatic Medicine*, Vol. 49, pages 493-507.

Mindfulness Meditation-Based Stress Reduction

- **1979 Jon Kabat-Zinn, Ph.D. started the first Mindfulness Meditation-Based Stress Reduction Clinic at the University of MA Medical Center in Worcester.**
- **Today his pioneering work is used throughout the world in diverse clinical settings.**

Kabat-Zinn, J. (1990) *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain and Illness.* New York: Delacorte Press.

Kabat-Zinn, J. (1994) *Wherever You Go There You Are: Mindfulness Meditation in Everyday Life.* New York: Hyperion.

Stress and Infection

- **1991 Publication in *The New England Journal of Medicine***
- **Showed a direct link between mental state and disease**
- **Demonstrated a strong correlation between levels of psychological stress and susceptibility to infection by a common-cold virus**

Keeping Your Heart in Mind

- **Two personality traits that increase the risk of coronary artery disease:**
 - Anger
 - Hostility
- **During the one-year period status post myocardial infarction, patients with an untreated depression have a higher mortality rate than treated depressed or non-depressed individuals**

Anxiety Disorders and a Mindfulness Meditation- Based Stress Reduction Program*

- **Anxiety Disorders Study - study design was a group outcome single subject variable baseline design**
- **22 subjects diagnosed with DSM-III-R defined GAD or PD +/- agoraphobia were enrolled in the study**
- **subjects were followed weekly prior to beginning the Stress Reduction & Relaxation Program, weekly during the 8 week intervention, and at 3 months and 3 years follow up**

***University of MA Medical Center, Worcester**

Miller, J., et.al. (1995) *General Hospital Psychiatry*, 17: 192-200.

Kabat-Zinn, J., et. Al. (1992) *American Journal of Psychiatry*, 149: 936-943.

DelMonte, M. (1985) *Clinical Psychology Review*, 5: 91-102.

Mindfulness Meditation and Anxiety Reduction: 3 Year F/U

Hamilton Rating Scale for Anxiety

N	Pre-Rx	Post-Rx	3 Yr F/U	p
17	25.65	17.29	17.24	<0.001

Miller, J., et.al. (1995) *General Hospital Psychiatry*, 17: 192-200.

Mindfulness Meditation and Anxiety Reduction: 3 Year F/U

Beck Anxiety Inventory

N	Pre-Rx	Post-Rx	3 Yr F/U	p
17	21.41	8.29	11.35	<0.001

Miller, J., et.al. (1995) *General Hospital Psychiatry*, 17: 192-200.

Three Factors Associated with Good Health

- **Optimism**
- **Hope**
- **A Sense of Control**

Effectiveness of Relaxation and Visualization Techniques as an Adjunct to Phototherapy and Photochemotherapy of Psoriasis

Psoriasis patients (n=12) were randomized to either a tape or no-tape adjunctive treatment in combination with their traditional UVB or PUVA treatment.

Bernhard, J., et. al., (1988) J. of the American Academy of Dermatology, Vol. 19, #3.

The tape included mindful focusing on breathing, proprioception, and music, and were listened to with earphones during treatment.

Clinic nurses recorded a “clearing point”, when less than 5% of the patient’s original psoriatic lesions remained.

Seven of the eight patients in the tape group achieved 95% clearing in a mean of 18.9 treatment sessions.

**Only one of the four controls achieved clearing in less than 40 sessions.
(p=0.055 by Wilcoxon’s rank sum comparison).**

Bernhard, J., et. al., (1988) J. of the American Academy of Dermatology, Vol. 19, #3.

Psychotherapy-therapist

- **meditation increases empathy**
- **Bare Attention/Evenly Suspended Attention:**
 - **Dr. Epstein states "Bare attention (Mindfulness) and evenly suspended attention both require what Freud called the suspension of judgment and the giving of 'impartial attention to everything there is to observe' (Freud).**
 - **In Buddhist terms bare attention is defined as 'the clear and single minded awareness of what actually happens to us and in us at the successive moments of perception' (Nyanaponika, 1973)".**

Epstein, M., *Psychoanalysis and Contemporary Thought*, Volume 11, #1.

Psychotherapy - Client

- **Meditation as an adjunct to psychotherapy**
- **relaxation during session**
- **precursor to hypnosis**
- **meditation between sessions**
- **concentration versus mindfulness**
- **cost effectiveness**

Kutz, I., et. al. (1985) *American Journal of Psychiatry*, 142:1-8.

Kutz, I., et. Al. (1985). *Psychotherapy and Psychosomatics*, 43: 209-218.

Craven, J. (1989) *Canadian Journal of Psychiatry*, 34: 648-653.

Bogart, G. (1991). *American Journal of Psychotherapy*, July, pp. 383-412.

Psychotherapy - Client

- **Mindfulness-Based Interventions:
Effective for depression and anxiety***
 - **Mindfulness-Based Cognitive Therapy**
 - **Mindfulness-Based Stress Reduction**
 - **Dialectical Behavior Therapy**
 - **Acceptance and Commitment Therapy**

*Lau M, Grabovac A. Mindfulness-Based Interventions: Effective for depression and anxiety. *Current Psychiatry*. 2009; 8 (12): 39-55.

Mindfulness-Based Cognitive Therapy

Integrates:

- **Techniques taught in Mindfulness-Based Stress Reduction**
- **Traditional cognitive therapy**
- **Introduction of “a new informal meditation – the 3 minute breathing space – to facilitate present-moment awareness in upsetting everyday situations”**

Lau M, Grabovac A. Mindfulness-Based Interventions: Effective for depression and anxiety. *Current Psychiatry*. 2009; 8 (12): 39-55.

Dialectical Behavior Therapy

- **Developed by Marsha M. Linehan, Ph.D. at the University of Washington, Seattle**
- **Published her core work in two consecutive texts:**
 - **Linehan, M.M. (1993). Cognitive behavioral therapy of borderline personality disorder. New York: Guilford Press.**
 - **Linehan, M.M. (1993). Skills Training Manual for Treating Borderline Personality Disorder. New York: Guilford Press.**
- **Remains the most effective treatment intervention for individual's with a Borderline Personality Disorder**

Dialectical Behavior Therapy

- **Four elements of DBT:**
 - Mindfulness training
 - Cognitive behavioral therapy
 - Psycho-education
 - The “dialectic” of distress tolerance/acceptance and personal change and emotional growth

Meditation: Psychiatric Complications/Contraindications

- **depersonalization and derealization experiences**
 - these can precipitate panic attacks
- **anxiety, tension, agitation, and restlessness may all be paradoxically increased**
- **exacerbations of depression**
- **extreme euphoria and grandiosity possibly evolving into religious delusions**
- **psychotic episodes**

Epstein, M. & Lieff, J. (1986). In K. Wilber, J. Engler & D. Brown
Transformations Of Consciousness. Boston: New Science Library.
Castillo, R. (1990). *Psychiatry*, 53: 158-168.

Meditation: Psychiatric Complications/Contraindications

- extreme caution with patients with a history of psychosis - modify techniques
- patients with organic brain syndrome will often have difficulty maintaining attention
- patients with severe trauma histories may feel too threatened by the relaxed states of meditation; feel vulnerable; re-experience their past traumas in a non-therapeutic manner
- unveiling of past memories, emotions, or bodily sensations that had previously been repressed; of a traumatic, neutral, or pleasurable quality*

*Miller, J. (1993) *The Journal of Transpersonal Psychology*, 25: 169-180.

Quote From The Buddha, From The Kalamas Sutra

"Do not believe in what you have heard; do not believe in traditions because they have been handed down for many generations; do not believe anything because it is rumored and spoken of by many; do not believe merely because the written statement of some old sage is produced; do not believe in conjectures; do not believe merely in the authority of your teachers and elders. After observation and analysis, when it agrees with reason and it is conducive to the good and benefit of one and all, then accept it, and live up to it."

