

## Weitergeleitete Nachricht

### TM-Technique Compared to Other Techniques of Meditation:

- 1. Focused Attention techniques** (Konzentrationsmethoden, charakterisiert durch EEG-Veränderungen im beta-2 (20-30 Hz) and gamma (30-50 Hz) Frequenz Bereich)
- 2. Open Monitoring techniques** (Kontemplationsmethoden („Achtsamkeits-Meditationen“), charakterisiert durch EEG-Veränderungen im frontal theta Bereich (5-8 Hz) und ev. im occipital gamma Bereich (30-50 Hz))
- 3. Automatic Self-Transcending techniques** (Transzendente Meditation, charakterisiert durch EEG-Veränderungen im alpha-1 (7-9 Hz) EEG Bereich)

Während die EEG Veränderungen während der Praxis der TM-Technik für eine verfeinerte geistige Aktivität und einen natürlichen Entspannungszustand sprechen, erfordern sowohl die Konzentrationsmethoden, als auch die „Open Monitoring Techniques“ (Achtsamkeits-Meditationen“) eine gewisse Art an geistiger Anstrengung. Die TM-Technik (Automatic Self-Transcending technique) führt zu einem anstrengungslosen Transzendieren des Meditationsprozesses selbst (Travis, Arenander, & DuBois, 2004; Travis et al., 2010). Man erfährt während der Ausübung der TM-Technik automatisch einen Zustand „reinen Bewusstseins“, die Leinwand (Projektionsfläche) der Bewusstheit, ohne jede Bewusstseins-Objekte; ein Niedrig-Stress-Zustand, der als Transzendentes oder Reines Bewusstsein bezeichnet wird (Travis & Pearson, 2000).

(Quelle:

<http://www.truthabouttm.org/truth/TMResearch/ComparisonofTechniques/index.cfm>)

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[www.meditation.at](http://www.meditation.at) (Transzendente Meditation)

[www.ayurveda.at](http://www.ayurveda.at) (Maharishi Vedische Medizin)

[www.ayurveda.at/aerzte](http://www.ayurveda.at/aerzte) (Maharishi Ayur-Veda für Ärzte)

[www.ayurveda.at/research.htm](http://www.ayurveda.at/research.htm) (Wissenschaftliche Studien, Vorträge, Kongresse)

[www.ayurveda.at/Aerzte/pdf/tm-broschuere-studien-allg.pdf](http://www.ayurveda.at/Aerzte/pdf/tm-broschuere-studien-allg.pdf) (Zusammenfassung wissenschaftlicher Studien; das Wichtigste aus über 600 Arbeiten; PDF 2,8 MB)

Ausführlicher Artikel über Maharishi Vedische Medizin: [www.ayurveda.at/info.pdf](http://www.ayurveda.at/info.pdf)

(Teil I: Theoretische Grundlagen, Teil II: Transzendente Meditation mit Überblick über wissenschaftliches Studienmaterial, Teil III: Begriffsbestimmung und praktische Tipps)

[www.SchuleOhneStress.at](http://www.SchuleOhneStress.at) (Bewusstsein-basierte Erziehung)

[www.VedischesManagement.at](http://www.VedischesManagement.at) (Bewusstsein-basiertes Management)

[www.weltfrieden.at](http://www.weltfrieden.at) (Vedisches Friedensprogramm)

# T.M. Compared to Other Techniques of Meditation

Source:

<http://www.truthabouttm.org/truth/TMResearch/ComparisonofTechniques/index.cfm>

## COMPARISON OF TECHNIQUES

### **Issue: Are All Forms Of Meditation And Relaxation The Same?**

**The Evidence:** There are many systems of meditation that widely differ from one another in their procedures, contents, objects, beliefs, and goals. Given these differences, it is not surprising that research has shown they have different subjective and objective effects.

- Three Types of Meditation
- Systems of Meditation
- Comparative Research
- Randomized Studies
- Meta Analyses
- Wide Range of Benefits
- The Myth of the Relaxation Response
- A Personal View

### **Three Types Of Meditation**

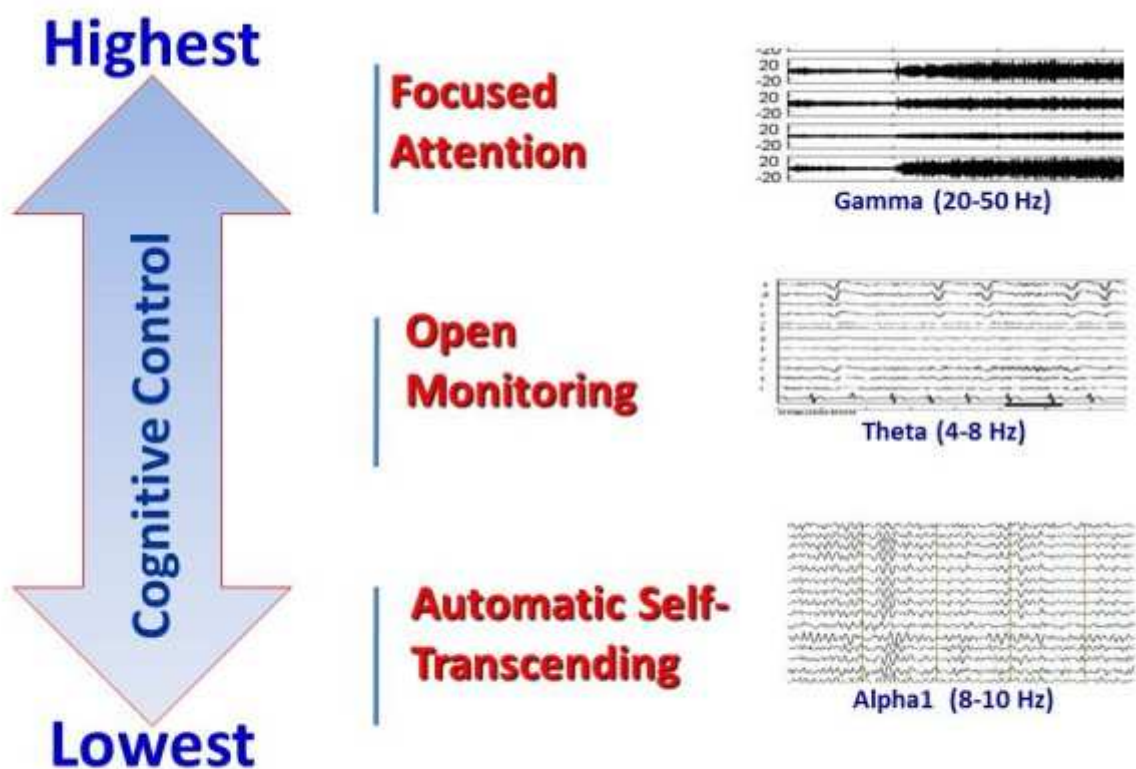
Meditation techniques differ with regard to the sensory and cognitive processes they require (Shear, 2006), their neurophysiological effects (Travis & Shear, 2010), and their behavioral outcomes (Orme-Johnson & Walton, 1998). Travis and Shear have identified three types of meditation practices, classified according to their EEG signatures and the corresponding cognitive processes they entail (Travis & Shear, 2010).

**1. Focused Attention techniques.** The first type, which includes focused attention or concentration techniques, is characterized by EEG in the beta-2 (20-30 Hz) and gamma (30-50 Hz) frequency bands, which are associated with voluntary sustained control of attention to keep it focused on the object of meditation.

**2. Open Monitoring techniques.** The second type includes open monitoring or mindfulness-based techniques, which involve dispassionate

non-evaluative monitoring of ongoing experience and are characterized by frontal theta (5-8 Hz) EEG, and perhaps occipital gamma (30-50 Hz) EEG (Cahn, Delorme, & Polich, 2010).

**3. Automatic Self-Transcending techniques.** The Transcendental Meditation technique falls within the third category, automatic self-transcending meditation, which is associated with alpha-1 (7-9 Hz) EEG, characteristic of reduced mental activity and relaxation. Whereas concentration and open monitoring meditations both require some mental effort (i.e., holding attention on its object or maintaining a stance of open monitoring, respectively), automatic self-transcending meditation is the effortless transcending of the meditation process itself (Travis, Arenander, & DuBois, 2004; Travis et al., 2010). It is said to automatically lead to the experience of "consciousness itself", the screen of awareness without any objects of awareness, a low-stress state called transcendental or pure consciousness (Travis & Pearson, 2000).



Travis and Shear, *Consciousness and Cognition*, 2010

**Cognitive Correlates of Alpha Coherence and Synchrony.** Alpha EEG power, coherence, and synchrony is part of the integrated pattern of deep rest observed during the Transcendental Meditation technique (Jevning, Wallace, & Biedebach, 1992). Studies have found that the Transcendental Meditation technique increases alpha coherence and synchrony as a state

and trait, indicating increased stability of the phase relationship between the collective neural activity in the left and right hemispheres and frontal and posterior brain areas (Dillbeck, Orme-Johnson, & Wallace, 1981; Dillbeck & Bronson, 1981; Gaylord, Orme-Johnson, & Travis, 1989; Hebert, Lehmann, Tan, Travis, & Arenander, 2005; Travis, 2001; Travis & Arenander, 2006; Travis et al., 2009).

**Basic EEG Research.** Over the last decade, basic research has found that alpha coherence and synchrony functionally bind distributed cortical neuronal assemblies needed to carry out a wide range of cognitive tasks—attentional, semantic, memory, and learning—as well as basic sensory and motor tasks (Palva & Palva, 2007; Sauseng & Klimesch, 2008). Whereas beta and gamma EEG coherence have a role of coordinating local, proximal cortical areas during cognitive processing, alpha coherence is essential for large-scale neural communication and integration between distant cortical areas that are necessary for conscious awareness and the meaningful interpretation of experience (Palva & Palva, 2007). EEG coherence during the Transcendental Meditation technique is positively correlated with intelligence, creativity, concept learning, and moral reasoning, as well as with reduced anxiety, emotional stability, and mental health (Dillbeck, Orme-Johnson, & Wallace, 1981; Nidich, Ryncarz, & Abrams, 1983; Orme-Johnson & Haynes; Travis & Arenander, 2006).

Also see page on [Cosmic Consciousness and Lucid Dreaming](#)

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## Different Systems Of Meditation

The following is an excerpt from the book *The Experience of Meditation: Experts Introduce the Major Traditions*, by Jonathan Shear, PhD, coming out in May, 2006, published by Paragon House ([click here](#)), or for Amazon, ([click here](#)).

"One common misconception, often found in popular books and articles, and even sometimes in textbooks and research articles, is that all meditation procedures are more or less "the same." But this is simply incorrect, for major meditation procedures often differ in important ways. The chapters of this book, written by experts in the relevant traditions (abbots of monasteries, heads of meditation centers, well-known scholars and teachers, etc.), make this quite clear. Zen Buddhist practices are likely to use concentration, whether directed perceptually towards one's breathing, or conceptually towards paradoxes (koans) that defy intellectual resolution. Taoist practices emphasize circulation of energy throughout channels of the body. Transcendental Meditation (TM) uses relaxed attention to special sounds (or mantras) repeated silently within the mind.

Yoga adds many other procedures and objects, such as concentration on energy centers in the body (chakras), the "light" of the mind, and attributes of God. Theravada Buddhism emphasizes dispassionate observation of the impermanence of sensations, thoughts, and whatever else is meditated on, including the self itself. Tibetan Buddhist Tsonghakapa emphasizes reasoned deconstruction of the reality of objects experienced in meditation, as well as concentrative practices to quiet the mind. Integral Yoga emphasizes attending to a sense of seeking, and remembering calmness and divinity both during and after meditation. Kriya yoga uses techniques of concentration on breath, and on God. Sufism follows the inner feeling of love for God. And Christian Centering Prayer uses a word of love to stimulate receptiveness to God within.

Thus traditional meditation procedures can differ with regard to the mental faculties they use (attention, feeling, reasoning, visualization, memory, bodily awareness, etc.), the way these faculties are used (effortlessly, forcefully, actively, passively), and the objects they are directed to (thoughts, images, concepts, internal energy, breath, subtle aspects of the body, love, God). They also often differ strongly with regard to how they relate to questions of belief. Some systems emphasize the need to hold particular philosophical, metaphysical and/or religious views; others emphasize complete independence of all matters of belief.

Different meditation traditions also often have very different goals, ranging from physical health and mental well being, to harmony with nature, higher states of consciousness and experience of God. In short,

even cursory knowledge of the many different mental activities, objects, contexts and attitudes used by the world's major meditation procedures makes it clear that it is a mistake to regard all these diverse procedures as being essentially the same.

Recognizing these differences is thus essential to understanding the procedures themselves. It is also necessary for understanding the significance of the considerable body of research on meditation. This research now clearly shows that different procedures often have very different effects on specific variables. Such differences should not be unexpected, given the differences between the procedures themselves. (Compare, for example, respiration-research on procedures that focus on breathing and procedures that ignore it, and stress-level research on procedures that require effort and concentration and procedures that emphasize effortlessness.)

As a result the mistake of lumping all meditation procedures together has often led to two further, opposing mistakes about the significance of the research itself. The first, sometimes made by supporters of the idea of meditation in general, is to conclude that significant results found to be produced by a particular procedure can simply be assumed to follow from other procedures as well. This is unreasonably optimistic.

The second is to combine the conflicting research on different procedures and, rather than noting that different procedures can produce different results and need to be evaluated individually, find no consistent results, and conclude that "meditation" (considered generically) has no effects at all. This mistake is in turn unreasonably pessimistic. Scientifically, the proper thing to do is to note that different procedures might well be expected to produce different results with regard to different variables (respiration, stress levels, EEG, etc.) and thus ought to be evaluated individually."

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## **Comparative Research On Different Systems Of Meditation And Other Self-Development Techniques**

Scientific research now clearly shows that different procedures of meditation and relaxation often have very different effects on specific variables. Such differences should not be unexpected, given the differences between the procedures themselves. Compare, for example, respiration research on procedures that focus on breathing and procedures that ignore it, and stress-level research on procedures that require effort and concentration and procedures that emphasize effortlessness.

The error of lumping together all meditation procedures has often led to two opposing mistakes about the significance of the research itself. The

first, sometimes made by supporters of the idea of meditation in general, is to conclude that significant results found to be produced by a particular procedure can simply be assumed to follow from other procedures as well. This is unreasonably optimistic. The second is to combine the conflicting research on different procedures, find no consistent results, and conclude that "meditation" (considered generically) has no effects at all. This mistake is in turn unreasonably pessimistic. Scientifically, the proper thing to do is to note that different procedures might well be expected to produce different results with regard to different variables (respiration, stress levels, EEG, etc.) and thus ought to be evaluated individually.

Randomized controlled trials have shown that, compared to other forms of meditation, relaxation, and health promotion, the Transcendental Meditation program decreases blood pressure, increases longevity and cognitive flexibility in the elderly, decreases arterial sclerosis, decreases post-traumatic stress syndrome and anxiety, and increases intelligence, creativity, field independence, practical intelligence, and speed of cognitive processing.

Meta-analyses are an objective means of drawing conclusions about an entire field of research, including all the studies said to show negative as well as positive results. Meta-analyses have found that the Transcendental Meditation program is superior to ordinary rest; that it is more effective in reducing anxiety than other meditation and relaxation techniques; more effective in increasing self actualization than other meditation and relaxation techniques; and more effective in reducing drug abuse, alcohol abuse, and cigarette use than other standard treatments. All these changes can be seen to result from the state of relaxation and coherence that the Transcendental Meditation program specifically produces.

**Reference:** Orme-Johnson, D. W., & Walton, K. G. (1998). All approaches to preventing and reversing the effects of stress are not the same. *American Journal of Health Promotion*, 12, 297–299.

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## **Ten Randomized Controlled Trials Comparing The Transcendental Meditation Program With Other Meditation And Relaxation Techniques**

### **Randomized Trial 1 – Increased Longevity and Improved Cognitive Flexibility in the Elderly through the Transcendental Meditation technique Compared to Mindfulness Training\* and a Relaxation Technique Modeled after the TM technique.**

This randomized study was in the context of an experimental test of the Transcendental Meditation program's impact on life-extension in the elderly (N=73 residents of eight retirement homes, mean age 81 years). Subjects were randomly assigned to one of three treatments highly similar

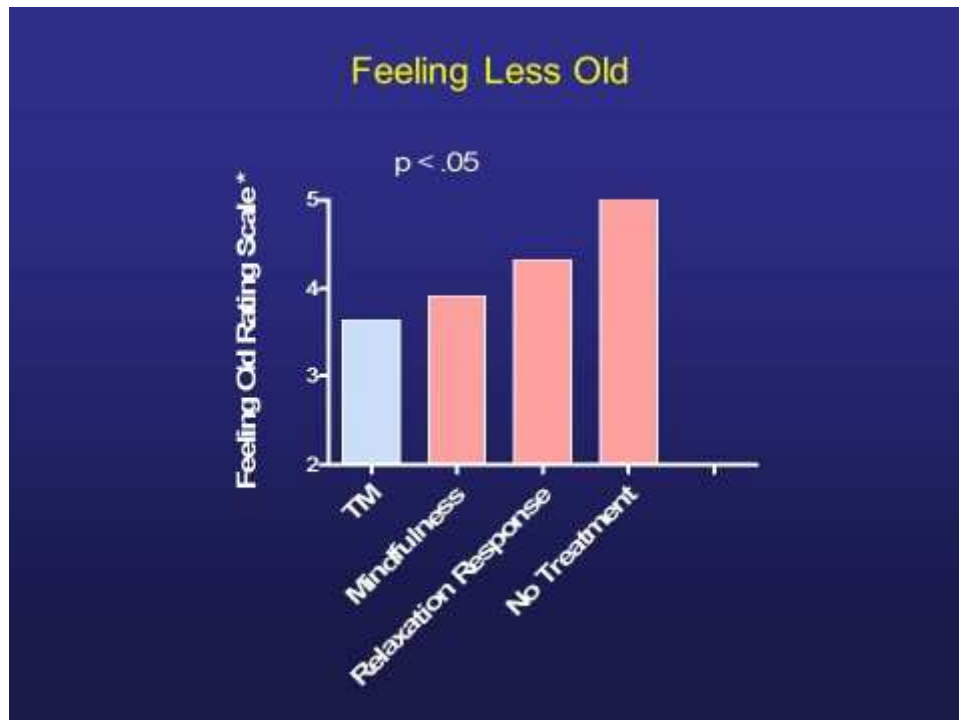


in external structure and in expectation-fostering features: 1) the TM technique, 2) mindfulness training in active distinction-making (MF)\*, and 3) a mental relaxation program (MR), or to a no-treatment control group (NT). The Transcendental Meditation group improved the most on the following measures: systolic blood pressure (with an average 12 mm Hg reduction), paired-associates learning, two measures of cognitive flexibility, mental health, self-ratings of behavioral flexibility and aging, and multiple indicators of treatment efficacy. After three years, the survival rate for the meditators was 100%, compared to 65%–87.5% for the other groups. The survival rate for the 478 non-treated subjects was only 62.6%.

Even though the mindfulness and mental relaxation treatment conditions were modeled after the Transcendental Meditation program, and had the same practice time, contact time with the teacher, and expectation-fostering features as the TM program, they did not produce the same effects on health, mental flexibility, and longevity as the TM program.

**\*Note:** This mindfulness program of active distinction-making is different from open monitoring techniques of cultivating non-judgmental awareness of current experiences, which are also called “mindfulness.” Open monitoring programs are not intended to directly induce relaxation, and they have not been shown to have the same physiological effects of relaxation as the Transcendental Meditation program, although they may have some indirect effects on inducing relaxation by changing how one evaluates thoughts and experiences.

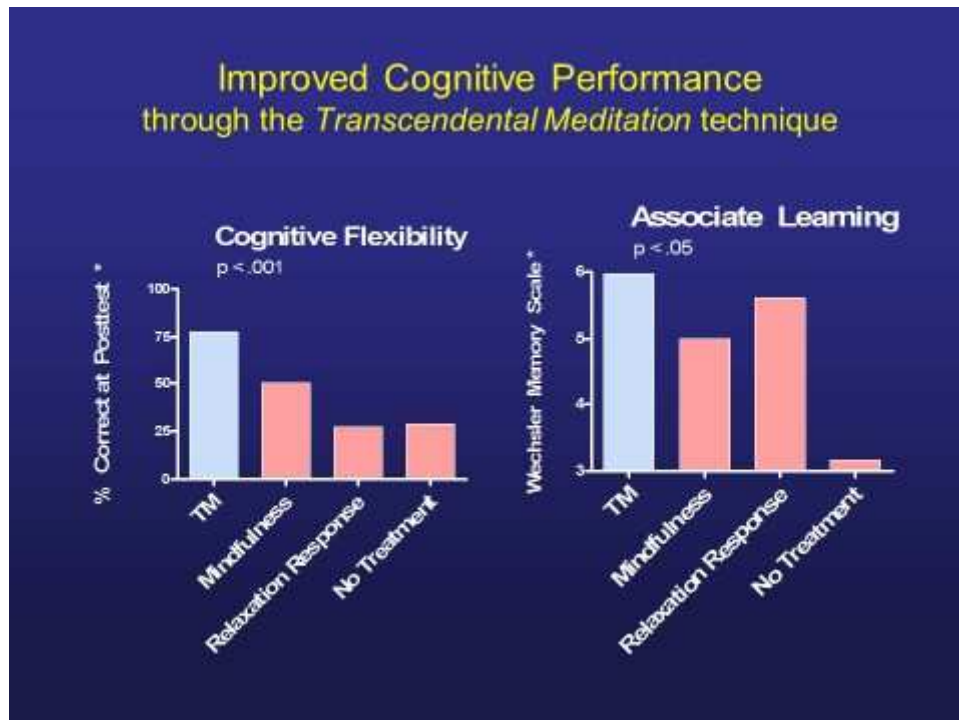
**Reference:** Alexander, C. N., Langer, E. J., Newman, R. I., Chandler, H. M., and Davies, J. L. (1989). Transcendental Meditation, mindfulness, and longevity: an experimental study with the elderly. *Journal of Personality and Social Psychology*, 57 (6): 950–964.



### **Randomized Trial 1a – Feeling Less Old.**

A randomized controlled trial of the elderly (mean age 81 years) found subjects who practiced the Transcendental Meditation technique for 3 months rated themselves as feeling “less old” than elders who practiced mindfulness and relaxation techniques. These subjective reports are supported by objective findings that the elders who practiced the TM technique showed improved cognitive abilities, lower systolic blood pressure, and a higher survival rate than comparison groups.

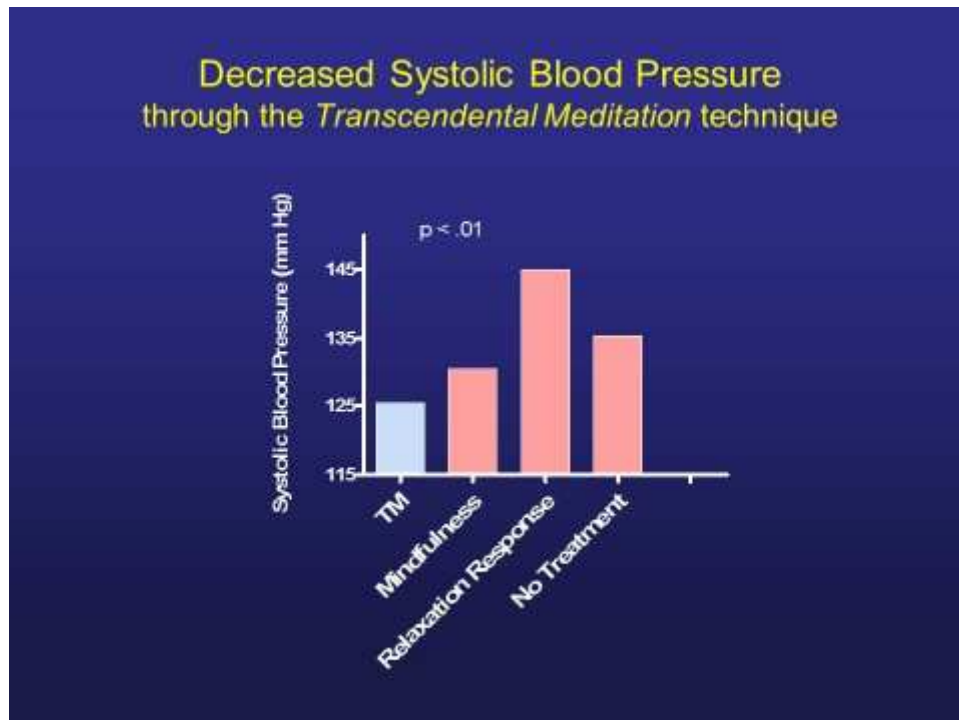
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### **Randomized Trial 1b – Improved Cognitive Performance.**

Objective measures of cognitive ability indicated that the elderly who practiced the Transcendental Meditation technique showed greater cognitive flexibility and improved associate learning compared to subjects who practiced mindfulness and relaxation techniques at the three-month posttest, co-varying for pretest levels. Cognitive flexibility indicates the ability to learn something new that is different from old verbal habits, and associate learning is the ability to memorize difficult new associations.

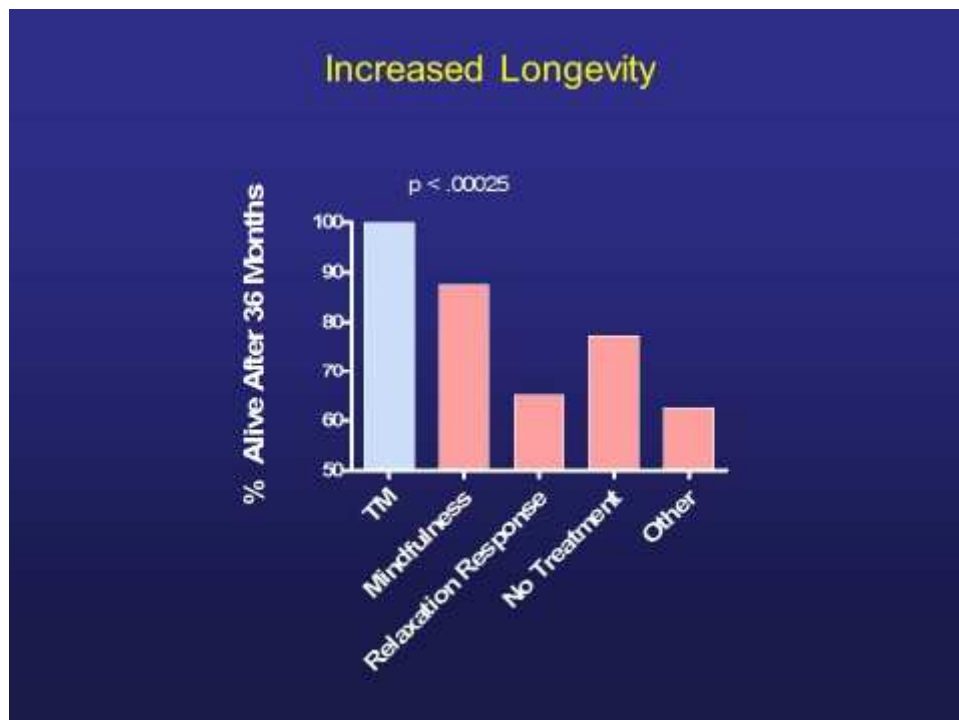
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#### **Randomized Trial 1c – Decreased Systolic Blood Pressure.**

Systolic blood pressure was significantly lower in the group practicing the Transcendental Meditation program compared to the mindfulness and relaxation groups at the three-month posttest, co-varying for pretest levels. Reduced blood pressure suggests that the mind-body relaxation gained during TM practice carries over to a more relaxed physiology outside of meditation.

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### **Randomized Trial 1d – Increased Longevity.**

At the three-year follow-up, 100% of the elderly practicing the Transcendental Meditation technique were still alive, whereas the survival rate was 87.5% for the mindfulness group, 65% for the relaxation response group, 77.3% for the no-treatment group, and 62.6% for other subjects in the nursing homes who did not participate in the experiment. The lower death rate in the TM group reflects the holistic effects of the practice on stress reduction in the mind and body.

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### **Randomized Trial 2A – Decreased Blood Pressure through the Transcendental Meditation technique Compared to Progressive Relaxation and Health Education.**

Inner-city black elderly with borderline hypertension were randomly assigned to either the Transcendental Meditation technique, Progressive Muscle Relaxation (PMR), or a health education usual-care control group (HE). All subjects received the same diet and exercise recommendations. Three months of TM practice produced an 11 mm Hg decrease in systolic blood pressure and a 6 mm Hg decrease in diastolic blood pressure, which were significantly larger than the reductions produced by Progressive Muscle Relaxation or usual-care.

This study was subsequently published in *Hypertension*, a journal of the American Heart Association. The Sixth Joint National Committee on the Detection, Evaluation, and Treatment of High Blood Pressure (JNCVI) cited this research on the TM technique as the only properly controlled trial of stress reduction that has shown effectiveness in reducing blood pressure among people with hypertension (JNCVI, 1997).

Reference: Schneider, R. H., Staggars, F., Alexander, C. N., Sheppard, W., Rainforth, M., Kondwani, K., Smith, S., King, C. G. (1995). A randomized controlled trial of stress reduction for hypertension in older African Americans. *Hypertension*, 26 (5): 820–827.

### **Randomized Trial 2B – Decreased Blood Pressure through the Transcendental Meditation technique in Gender and Stress-Risk-Factor Subgroups.**

A separate subgroup analysis by sex and stress factors was published in a second paper on the study by Schneider, et al. (1995). Alexander et al. (1996) found that both TM females and TM males exhibited greater reduction in blood pressure than the HE female and HE male groups, respectively. The TM male subgroup also exhibited greater reduction in systolic blood pressure than PMR males, and PMR males showed greater reduction in diastolic blood pressure than HE males.

Another aspect of Alexander et al.'s subgroup analysis is the demonstration of efficacy of the TM technique for treating hypertension patients in both high- and low-risk categories for six hypertension-related measures of risk: obesity, alcohol use, psychosocial stress, dietary sodium-to-potassium ratio, physical inactivity, and presence of multiple risks. The Transcendental Meditation program was found to be effective for reducing blood pressure for all risk groups. The universality of the TM technique's effects across gender and stress subgroups supports the view that the TM technique creates coherence at fundamental, holistic levels of the mind and body.

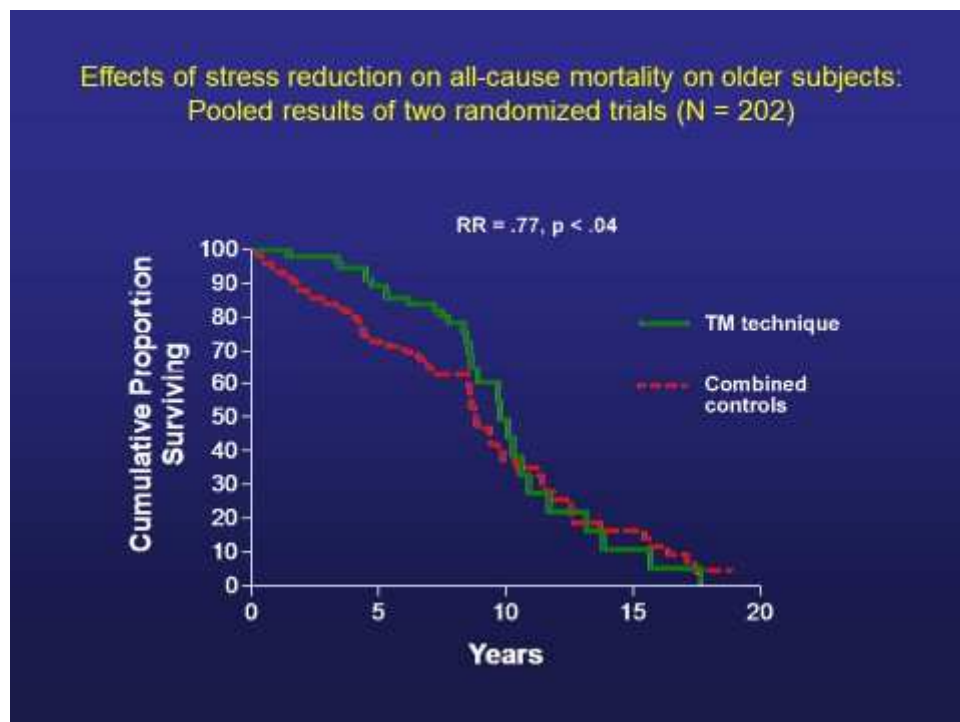
**Reference:** Alexander, C. N., Schneider, R. H., Staggars, F., et al. (1996). Trial of stress reduction for hypertension in older African Americans (part II): sex and risk subgroup analysis. *Hypertension*, 28: 228–23.

### **Randomized Trial 3 – Decreased Blood Pressure through the Transcendental Meditation technique Compared to Progressive Relaxation and Health Education: One-Year Replication.**

In a replication study on a different sample of older African Americans (N=150 subjects), the TM group decreased SBP/DBP by 3/6 mm Hg over a 12-month period, compared to 1/3mm Hg for PMR or HE ( $ps = .1$  for SBP,  $ps = .01$  for DBP). In addition, the TM group reduced use of antihypertensive medication relative to increases for PMR ( $p = .001$ ) and

HE ( $p = .09$ ) groups. Collectively, these findings indicate potential usefulness of the TM technique as an adjunct in the long-term treatment of hypertension in African Americans.

**Reference:** Schneider, R. H., Alexander, C. N., Staggers, F., Orme-Johnson, D. W., Rainforth, M., Salerno, J., Sheppard, W., Castillo-Richmond, A., Barnes, V. A., Nidich, S. I. (2005) A randomized controlled trial of stress reduction in the treatment of hypertension in African Americans over one year. *American Journal of Hypertension*, 18 (1): 88–98.



#### **Randomized Trial 4 – Decreased Mortality through the Transcendental Meditation technique Compared to Progressive Muscle Relaxation, Health Education Control, Mindfulness, Relaxation, and Usual Care.**

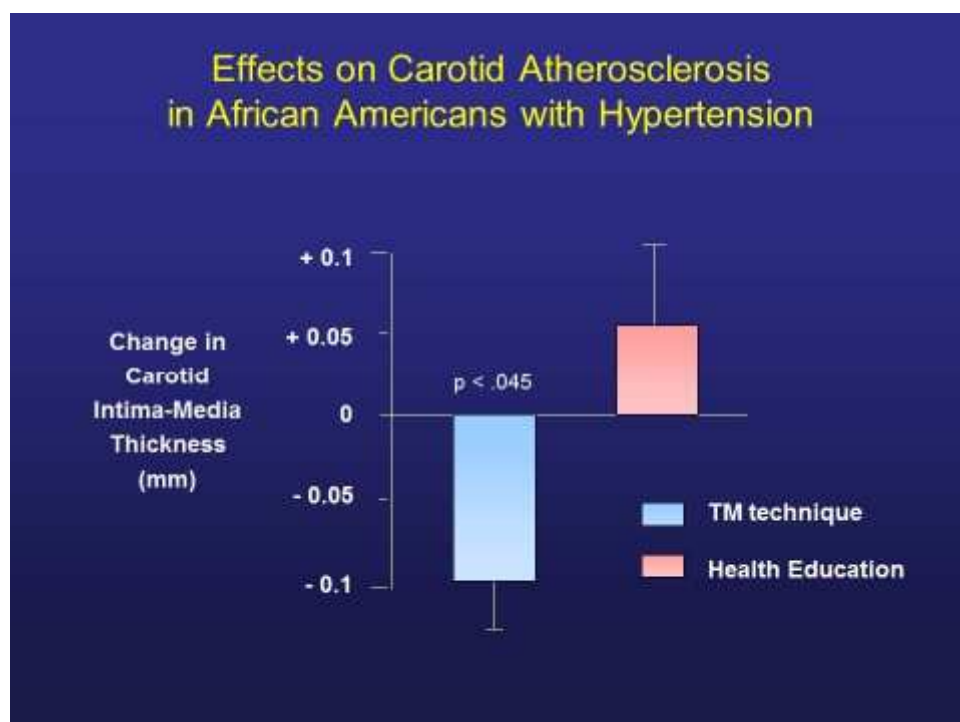
This study<sup>1</sup> followed the mortality rates for elderly white and African American men and women with stage 1 or 2 hypertension (mean age  $72.0 \pm 10.6$  years) who had participated in two randomized controlled trials on hypertension<sup>2-4</sup>. The original studies had found that TM practice reduced blood pressure relative to control groups (Progressive Muscle Relaxation, Health Education control, Mindfulness, Relaxation, and Usual Care). This study followed the mortality data from the National Death Index for these 202 individuals over an average of  $7.6 \pm 3.5$  years, maximum of 18.8 years.

After three years, the TM group had a 91% decrease in rate of all-cause mortality compared to combined controls, and after ten years it had a 40% reduction. Over the entire course of the study, the TM group had a

23% reduction in all-cause mortality, a 30% reduction in cardiovascular mortality, and a 49% reduction in risk of death from cancer compared to combined controls. The reduction of the death from all causes and from the two major causes of death in the U.S. supports the view that the level of mind-body relaxation achieved through TM practice is greater than that achieved by other meditation and relaxation techniques.

### References:

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2. Schneider, R.H., Staggars, F., Alexander, C., Sheppard, W., Rainforth, M., Kondwani, K., Smith, S., King, C. G. (1995). A randomized controlled trial of stress reduction for hypertension in older African Americans. *Hypertension*, 26: 820–827.
3. Alexander, C. N., Schneider, R., Staggars, F., Sheppard, W., Clayborne, M., Rainforth, M., Salerno, J., Kondwani, K., Smith, S., Walton, K., Egan, B. (1996). A trial of stress reduction for hypertension in older African Americans (part II): sex and risk factor subgroup analysis. *Hypertension*, 28: 228 –237.
4. Alexander, C. N., Langer, E. J., Newman, R. I., Chandler, H. M., Davies, J. L. (1989). Transcendental Meditation, mindfulness, and longevity: an experimental study with the elderly. *Journal of Personality and Social Psychology*, 57: 950 –964.





### **Randomized Trial 5 – Reduced Carotid Atherosclerosis through the Transcendental Meditation technique Compared to Health Education.**

This randomized controlled trial evaluated the effects of the TM program on carotid intima-media thickness in hypertensive African American men and women, aged > 20 years, over a six- to nine-month period. The TM group showed a significant decrease in thickness of 20.098 mm (95% CI 20.198 to 0.003 mm) compared with an increase of 0.054 mm (95% CI 20.05 to 0.158 mm) in the control group ( $P < 0.038$ , 2-tailed). The study indicates that relaxation and stress reduction through the Transcendental Meditation program is associated with reduced carotid atherosclerosis compared with health education in hypertensive African Americans.

**Reference:** Castillo-Richmond, A., Schneider, R. H., Alexander, C. N., Cook, R., Myers, H., Nidich, S., et al. (2000). Effects of stress reduction on carotid atherosclerosis in hypertensive African Americans. *Stroke*, 31: 568–573.

### **Randomized Trial 6 – Decreased Post-Traumatic Stress Disorder through the Transcendental Meditation technique Compared to Psychotherapy.**

A study of Vietnam War veterans suffering from post-traumatic stress disorder randomly assigned subjects to either the Transcendental Meditation program or psychotherapy. The comparison subjects receiving psychotherapy were of similar age and background, and were undergoing similar life-problems as those who received the Transcendental Meditation program. Yet the TM group showed significant improvements compared to controls on all measures—decreased anxiety, decreased alcohol use, decrease marital problems, decreased startle response, decreased emotional numbness, and improved employment status.

The study clearly showed that the forms of psychotherapy commonly used at that time to treat post-traumatic stress disorder did not have the same effects as the Transcendental Meditation program.

**Reference:** Brooks, J. S., and Scarano, T. (1986). Transcendental Meditation in the treatment of post-Vietnam adjustment. *Journal of Counseling and Development*, 64: 212–215.

### **Randomized Trials 7 - 9 – Improved Cognitive Performance and Reduced Anxiety through TM Practice Compared with a Traditional Contemplation Technique, Napping and Usual Schooling.**

Three controlled longitudinal studies on students in Taiwan randomly assigned subjects to the Transcendental Meditation program, napping, usual schooling (no special treatment), or to a contemplation meditation technique in which the subjects recited the word “Tao”, which has a well-

known meaning in the Chinese culture. All students had usual school classes. In addition, the experimental groups (TM technique, tradition meditation, or napping) practiced their assigned technique daily during school for approximately 20 minutes and a second at home in the afternoon.

Study 1 (N = 154, mean age 16.5, males and females) found that after six months the TM group increased on all seven measures—field independence, creativity, general fluid intelligence, practical intelligence, speed of information processing (shorter Inspection Time) and decreased on state and trait anxiety—compared to the no-treatment and napping groups, with the exception that the comparison of the TM group with the napping group did not reach statistical significance for general fluid intelligence. The napping group did not differ from the no-treatment group on any measure.

Study 2 (N = 118, mean age 14.6, males and females) found that after six-months the TM group improved more than the traditional contemplation technique group on five of the measures— creativity, practical intelligence, speed of information processing (shorter Inspection Time) and state and trait anxiety. The TM group improved more than the no-treatment group on all seven measures, as in study 1. The contemplation meditation group improved more than the no-treatment group on two measures, field independence and speed of information processing (Inspection Time).

Study 3 (N = 99, mean age 17.8 years, males) found that after a year the TM group improved more than the no-treatment group on all seven measures, replicating studies 1 and 2.

**Reference:** So, K. T., & Orme-Johnson, D. W. (2001). Three randomized experiments on the holistic longitudinal effects of the Transcendental Meditation technique on cognition. *Intelligence*, 29, 419-440.

### **Randomized Trial 10 – Increased Field Independence through the Transcendental Meditation technique Compared to Sitting Quietly.**

A random assignment study on field independence found increased field independence through TM practice compared to ordinary rest.

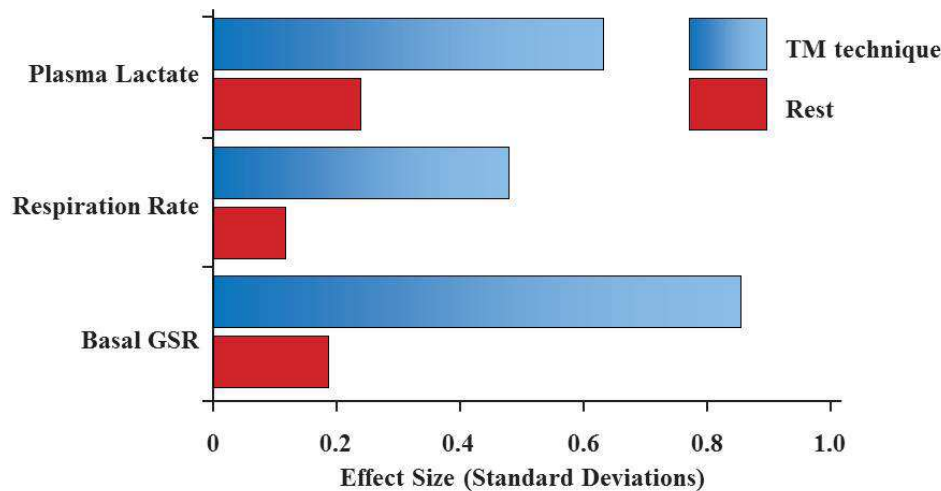
**Reference:** Pelletier, K. R. Influence of Transcendental Meditation upon autokinetic perception. *Perceptual and Motor Skills* 39: 1031–1034, 1974.

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**Eight Meta-Analyses Comparing The Transcendental Meditation Program With Other Meditation And Relaxation Techniques**

## Increased Physiological Relaxation

Meta-analysis of 32 studies

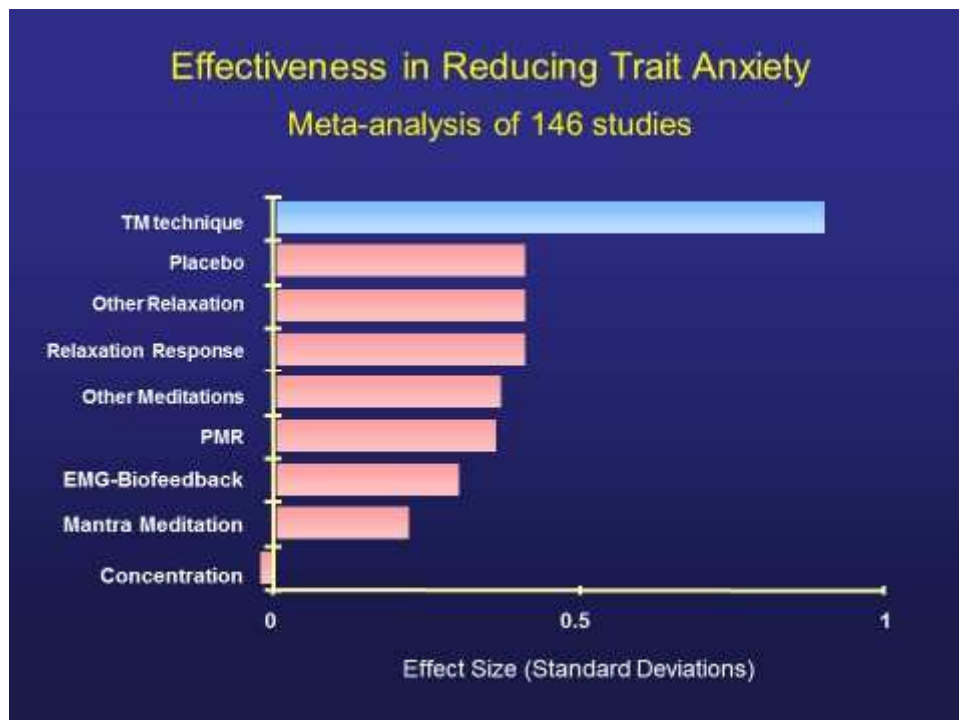


Reference: Dillbeck, M., and Orme-Johnson, D. (1987). *American Psychologist*, 42, 879–881.

### Meta-Analysis 1 – Decreased Physiological Stress Markers through the Transcendental Meditation technique Compared with Ordinary Rest.

A meta-analysis of 32 physiological studies compared the Transcendental Meditation program and eyes-closed rest. It showed that effect sizes for respiration rate, plasma lactate level, and basal skin resistance increased more than twice as much during the Transcendental Meditation program as during ordinary sitting rest. These results cannot be attributed to regression towards the mean because the Transcendental Meditation program subjects had initially lower levels than controls of respiration rate, plasma lactate levels, spontaneous skin resistance levels, and heart rate. The initially deeper level of relaxation in the Transcendental Meditation program subjects suggests that decreased physiological indices of stress through the Transcendental Meditation program is cumulative.

**Reference:** Dillbeck, M., and Orme-Johnson, D. (1987). *American Psychologist*, 42, 879–881.



### **Meta-Analysis 2 – Decreased Trait Anxiety through the Transcendental Meditation technique Compared to Other Meditation and Relaxation Techniques.**

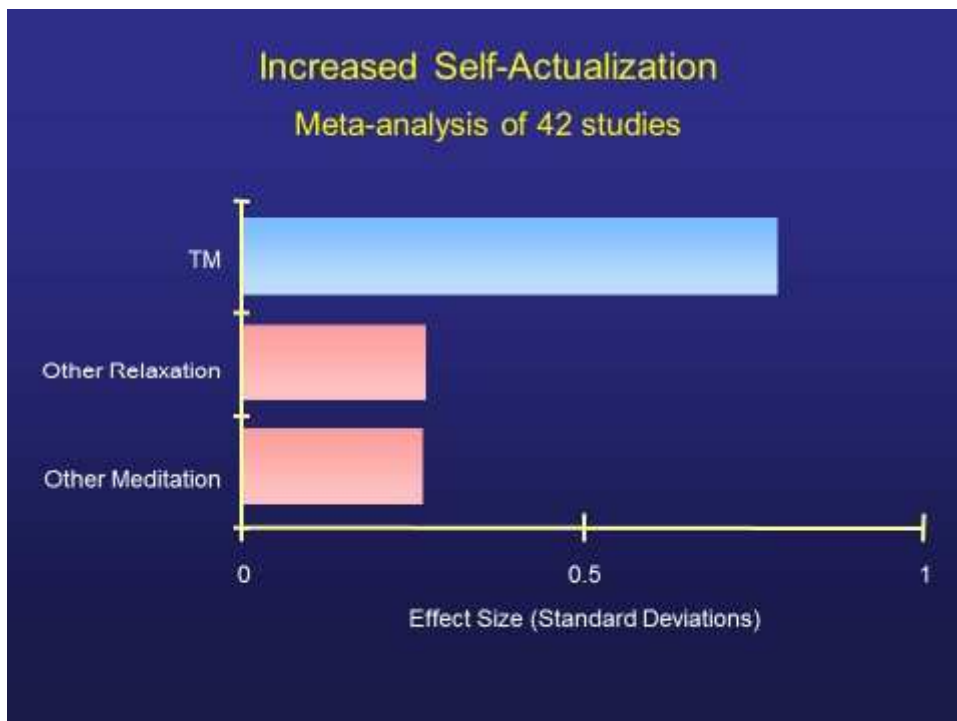
Trait anxiety, one's typical state of anxiety, is a key indicator of psychological relaxation. This meta-analysis compared all techniques on which trait anxiety had been studied, 146 independent outcomes. The subject populations included in the study were college, high school, adult, psychiatric or drug abuse patients, children, adult prisoners, juvenile offenders, and the elderly. Subjects with initially high and low levels of anxiety were also studied.

The techniques studied were the Transcendental Meditation technique, Progressive Relaxation (PR), Benson's Relaxation Response technique, concentration meditation, Sanskrit mantra meditation with permissive attitude, EMG biofeedback, and placebo techniques. The study found that the Transcendental Meditation program had more than twice the effect size on reducing trait anxiety as all other treatments. All the other techniques scored no better than a placebo. The exception was Concentration Meditation, which was less effective than a placebo, indicating that concentration and control of the mind can exacerbate anxiety.

This meta-analysis controlled for a number of possible confounding variables, including mental health status of the population, age, sex, experimental design, duration and hours of treatment, pretest anxiety, demand characteristics, expectation effects, experimenter attitude (whether the researcher was pro- or anti-TM), type of publication, and attrition. These controls did not alter the overall conclusions.

The difference in effect sizes between the Transcendental Meditation program and other treatments was maintained even when only published studies were included, when only studies with the strongest design were included, or when only randomized studies conducted by researchers who were neutral or negative towards the TM program were included. Of all the techniques studied, only the Transcendental Meditation technique showed a positive correlation between the reduction of anxiety and length of time that the technique had been practiced. These results indicate that it is the practice of the Transcendental Meditation technique *per se* that causes the reduction on anxiety, not some other factors.

Reference: Eppley, K., Abrams, A., Shear, J. (1989). Differential effects of relaxation techniques on trait anxiety: a meta-analysis. *Journal of Clinical Psychology*, 45 (6): 957–974.

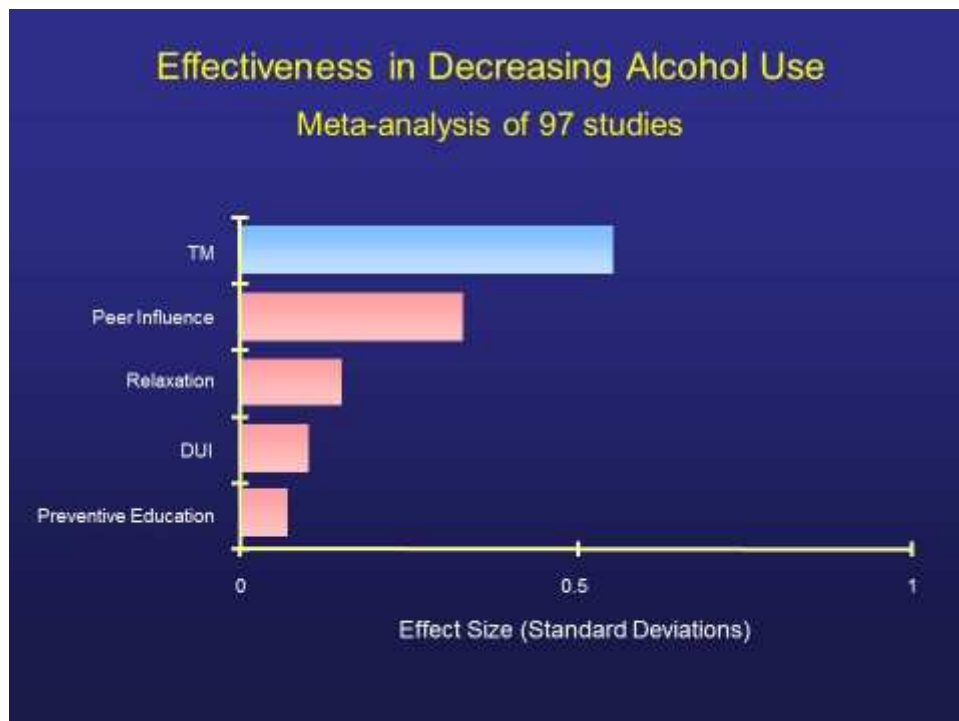


### **Meta-Analysis 3 – Increased Self Actualization through the Transcendental Meditation Technique Compared to Mindfulness Training, Zen, Relaxation Response Techniques, Yoga, Mantra Meditation, Progressive Relaxation, or Other Relaxation techniques.**

This meta-analysis of 42 studies found that the Transcendental Meditation program was significantly more effective in increasing self-actualization than other forms of meditation and relaxation. This analysis presented evidence that the physiological state of relaxation and coherence produced by the Transcendental Meditation technique is the key to “unfreezing” human development and fostering self-actualization. The test of self-actualization used in this study (the Personal Orientation Inventory) has two of the major composite indices.

The first is Time Competence, which measures the degree to which one is "present" oriented instead of preoccupied with the past or being anxious about the future. The second is Inner Directedness, which measures whether the individual's source of direction in daily life comes primarily from an inner sense of self or from external influences. Both of these qualities are diminished by anxiety and worry and are enhanced by mind-body relaxation and coherence. The meta-analysis found that practice of the Transcendental Meditation program increased both these aspects of self-actualization three times more than other meditation and relaxation techniques, providing further evidence that TM produces greater mind-body relaxation than other techniques.

**Reference:** Alexander, C. N., Rainforth, M., & Gelderloos, P. (1991). *Journal of Social Behavior and Personality*, 6, 189–247.



**Meta-Analysis 4 – Reduced Alcohol Abuse through the Transcendental Meditation technique Compared to Peer Influence Programs, Relaxation Techniques (Biofeedback, Progressive Muscle Relaxation, Clinically Standardized Meditation, Relaxation Response), Driving Under the Influence (DUI) Programs, and Preventive Education.**

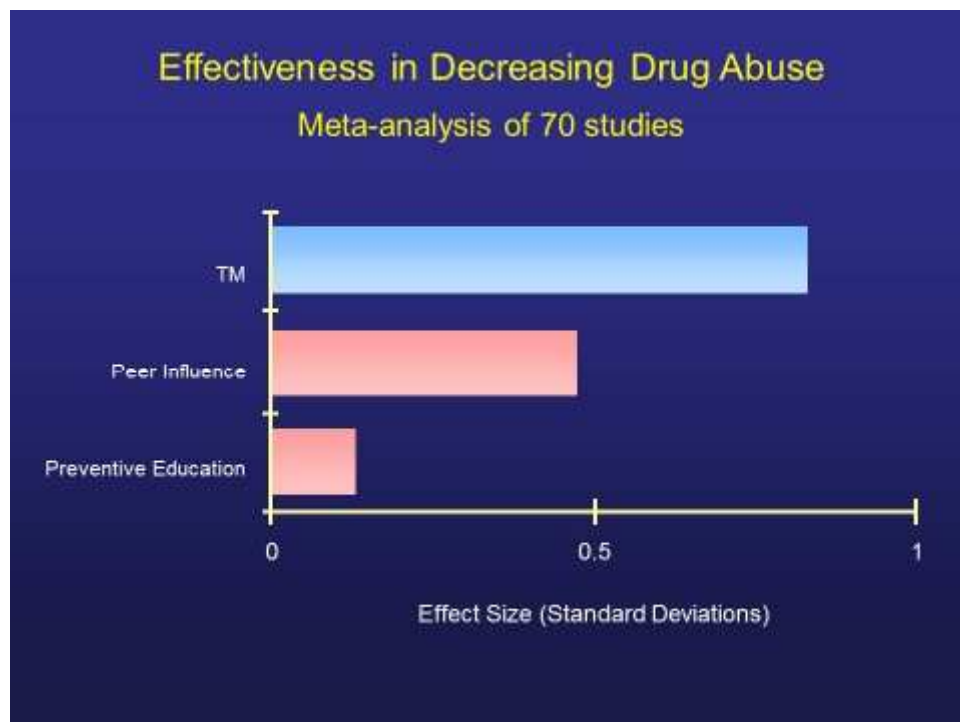
There were 14 studies on the Transcendental Meditation technique and 11 on relaxation techniques. The mean effect size for relaxation techniques was .15, not significantly different from controls. By contrast, the mean effect size for the Transcendental Meditation technique compared to controls was .55 for all studies (N = 14) and also just for well-designed studies (N = 8). Moreover, the effect size was 1.35 for serious users. This suggests a pattern of positive treatment effect that cannot be attributed

to weak designs of studies or studies focusing on more casual users. The results for the other standard treatment programs are from published meta-analyses in the literature, and indicate that Peer Influence is the best standard treatment.

Chronic stress causes long-lasting neurochemical and endocrine abnormalities, which prolong psychological distress and impair coping abilities. Substance abuse can be seen as an attempt to restore balance to the system through self-medication. Unfortunately, the abused substances give rise to further dysfunction and imbalance in the long run. The Transcendental Meditation program provides a state of mind-body relaxation that naturally optimizes the psychophysiology, thus removing the impetus for artificial attempts to do so through drugs.<sup>2</sup>

### References:

1. Alexander, C.N., Robinson, P., & Rainforth, M. (1994). Treating and preventing alcohol, nicotine, and drug abuse through Transcendental Meditation: A review and statistical meta-analysis. *Alcoholism Treatment Quarterly*, 11, 13–88.
2. Walton, K. G., Levitsky, D. (1994). A neuroendocrine mechanism for the reduction of drug use and addictions by Transcendental Meditation. *Alcoholism Treatment Quarterly*, 11 (1/2): 89–117.

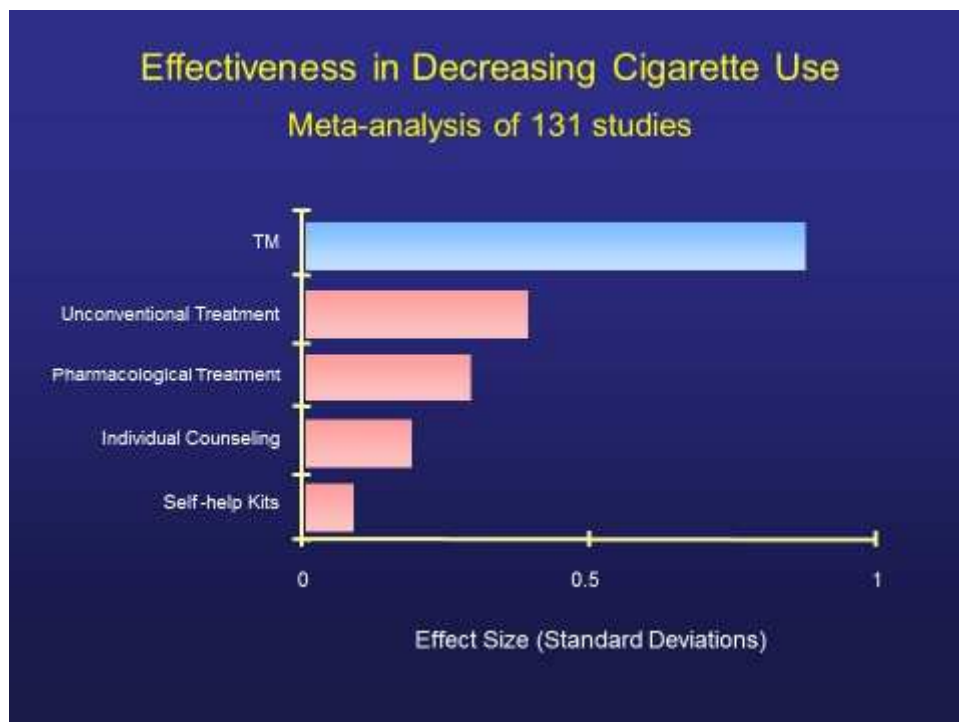


### Meta-Analysis 5 – Reduced Drug Abuse through the Transcendental Meditation technique Compared to Peer Influence and Preventive Education Programs.

A fifth meta-analysis (198 studies) found that the Transcendental Meditation program is one of the most effective means known for reducing

drug abuse.<sup>1</sup> The average effect size for the TM program was .83, compared to .47 for peer influence programs, and .13 for preventive education programs. The effect sizes for the strongest research design and for heavy users were even higher for TM practice, .91 and 1.16 respectively.

**Reference:** Alexander, C.N., Robinson, P. & Rainforth, M. (1994). Treating and preventing alcohol, nicotine, and drug abuse through Transcendental Meditation: A review and statistical meta-analysis. *Alcoholism Treatment Quarterly*, 11: 13–88.

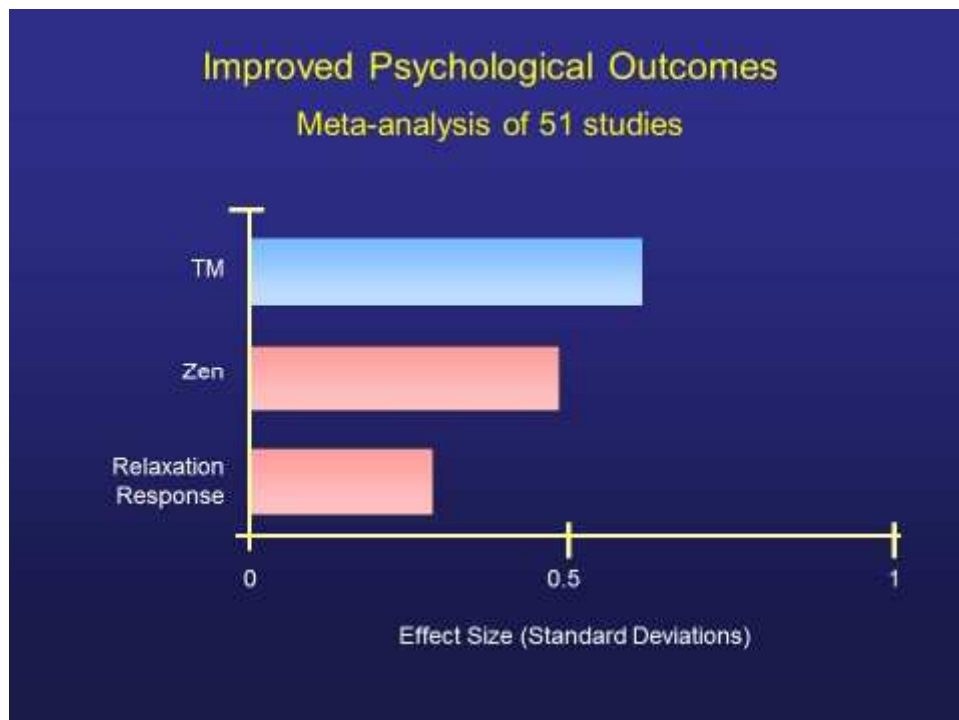


**Meta-Analysis 6 – Reduced Cigarette Use through the Transcendental Meditation technique Compared to Unconventional Treatments (e.g., Acupuncture, Sensory Deprivation, Hypnosis), Pharmacological Treatment, Individual Counseling, and Self-Help Kits.**

Cigarette smoking accounts for as many as 30% of all coronary heart disease deaths in the U.S., with the risk being strongly dose-related. Moreover, it doubles the risk of virtually every disease. A meta-analysis on the TM technique on a variety of populations found that the average effect size for the six randomized and six longitudinal controlled trials on the TM technique was 0.97 (range: 0.08–0.38) for cigarette use, which was significantly higher than standard and unconventional programs.

**Reference:** Alexander, C. N., Robinson, P. & Rainforth, M. (1994). Treating and preventing alcohol, nicotine, and drug abuse through Transcendental Meditation: A review and statistical meta-analysis. *Alcoholism Treatment Quarterly*, 11, 13–88.



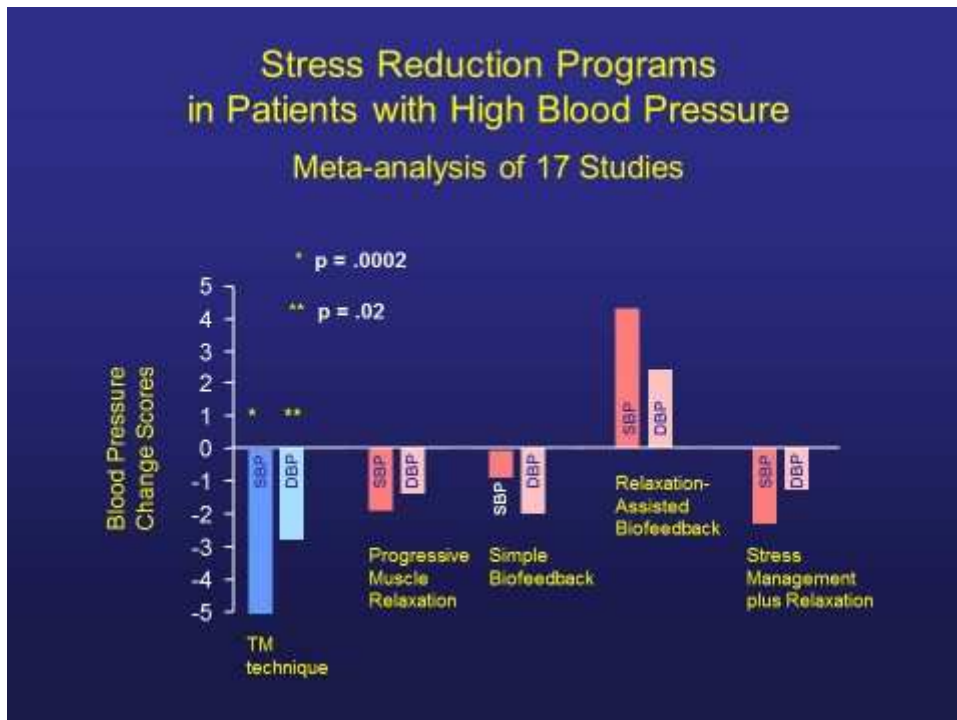


**Meta-Analysis 7 – Improved Psychological Health through the Transcendental Meditation Technique Compared to Zen and Other Meditation Techniques Designed to Mimic the TM technique (Relaxation Response Techniques).**

This meta-analysis of 51 studies of different meditation techniques consisting of more than 9,700 research subjects and 400 outcome findings found a significantly larger effect size from the Transcendental Meditation program compared to other forms of meditation on psychological measures (e.g., anxiety and depression). The result was maintained in the studies of highest validity and strongest experimental design.

**Reference:** Ferguson, P. C. An integrative meta-analysis of psychological studies investigating the treatment outcomes of meditation techniques. (1981). Doctoral thesis, School of Education, University of Colorado, Boulder, Colorado, U.S.A.

Reprinted in part in: Chalmers, R. A., Clements, G., Schenkluhn, H., and Weinless, M., (Eds.) (1989). *Scientific research on Maharishi's Transcendental Meditation and TM-Sidhi program: Collected Papers*, Vol. 3. Paper 272, pp. 2039 – 2048. Vlodrop, Netherlands: MVU Press.



**Meta-Analysis 8 – Decreased Blood Pressure through the Transcendental Meditation technique Compared to Progressive Muscle Relaxation, Biofeedback, Relaxation-Assisted Biofeedback, and Stress Management Plus Relaxation.**

This study of the effects of stress reduction programs on hypertension patients evaluated high-quality randomized studies that used active controls, adequate baseline measurement, and blinded blood pressure assessment (17 trials with 23 treatment comparisons and 960 participants). Meta-analysis was used to calculate blood pressure changes. The chart above shows mean changes in systolic blood pressure (left bar) and diastolic blood pressure (right bar) for each treatment category.

The results for blood pressure decreases associated with biofeedback, relaxation-assisted biofeedback, progressive muscle relaxation, and stress management training were not statistically significant; however, the TM program significantly lowered blood pressure by 5.0 mm Hg systolic and 2.8 mm Hg diastolic. Blood pressure reductions of this magnitude predict significant decreases in cardiovascular disease risk. The results of this meta-analysis, along with the results of other meta-analyses, support the view that the Transcendental Meditation program produces a uniquely effective form of mind-body relaxation.

**Reference:** Rainforth, M. V., Schneider, R. H., Nidich, S. I., Gaylord-King, C., Salerno, J. W., Anderson, J. W. (2007). Stress reduction programs in patients with elevated blood pressure: a systematic review and meta-analysis. *Current Hypertension Reports*, 9 (6): 520–528.

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## WIDER RANGE OF BENEFITS

The wide range of benefits of the Transcendental Meditation program has not been demonstrated by any other meditation or relaxation technique. The more than 600 studies conducted in more than 200 universities and research institutions in 29 countries indicate that the Transcendental Meditation program improves individual and collective life. No other meditation or relaxation technique can make this claim. The following are a few important findings.

- **Improved General Health**—A study of insurance statistics of 2000 TM meditators over a five-year period has shown a greater than 50% reduction in both inpatient and outpatient medical care utilization compared to controls matched for age, gender, and occupation. The Transcendental Meditation program group had lower sickness rates in all categories of disease, including 87% less hospitalization for heart disease and 55% less for cancer. The difference between the Transcendental Meditation program and other groups was greatest for individuals over 40 years of age.

Reference. Orme-Johnson, *Psychosomatic Medicine*, 49, 493-507, 1987).

- **Reduced Cholesterol and Blood Pressure**—A longitudinal study demonstrated reduced cholesterol and blood pressure levels through the Transcendental Meditation program in hypercholesterolemic patients.

Reference. Cooper and Aygen, *Journal of Human Stress* 5 (4), 24-27, 1979).

- **Effective Prison Rehabilitation**—A study of recidivism found that 241 inmates of Folsom and San Quentin prisons and Deuel Vocational Institute who learned the Transcendental Meditation program had significantly more favorable parole outcomes each year from one to five years after release compared to controls matched for parole year, offense, prior commitment record, institution, race, age, and drug abuse history.

Reference. Bleick, C. R. and Abrams, A.I. . The Transcendental Meditation program and criminal recidivism in California. *Journal of Criminal Justice*. 15: 211-230, 1987.

Dillbeck and Abrams narratively and quantitatively reviewed research projects on the Transcendental Meditation program in eight correctional settings, involving almost 1,500 inmates. These studies indicate that regular practice of the Transcendental Meditation program leads to positive changes in health, personality development, and behavior among inmates.

Reference. Dillbeck, M. C. and Abrams, A. I. The application of the Transcendental Meditation program to correction. *International Journal of Comparative and Applied Criminal Justice* 11(1): 111–132, 1987.

**Self Recovery-** This is a book of theory and research on the effects of the Transcendental Meditation program and other modalities of Maharishi's Ayur-Veda on treating addictions. This book contains original research papers ranging from how TM influences the biochemical substrates of addictions to evidence that large groups of TM meditators create coherence and collective consciousness, which addresses the problem of addictions in society at its roots. The book also contains several clinical case studies, theoretical analyses of how TM works, as well as a meta-analysis comparing the TM program with all standard treatments for treating addictions.

Reference. *Self Recovery: Treating Addictions Using Transcendental Meditation and Maharishi's Ayur-Veda*. David F. O'Connell and Charles N. Alexander, editors. The Haworth press, New York, 1994.

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## A Personal View



Over the 40 years that I've been interested in self-development, I've tried most of the meditation and relaxation techniques that are out there. In my experience none of them do what Transcendental Meditation does.

The difference is that Transcendental Meditation produces transcending, taking the mind from its active levels to increasing subtler levels, until it transcends to transcendental consciousness, the inner silent, unbounded awareness at the basis of the mind, which is the source of bliss, happiness, and creativity.

Many techniques that I am aware of do not even know about transcending, much less purport to produce it. Some of them produce some degree of relaxation, but it is not accompanied by that profound sense of well-being and nourishment that I get from TM.

Other techniques may talk about Inner Being and The Self, and whereas talk, chanting, and singing about the sublime or praying may create a nice mood, that is not transcending. In fact, such mental activity keeps the mind active and prevents transcending. Likewise, concentration

techniques that attempt to focus the mind on a thought or object, such as a candle, also keep the mind active and prevent transcending.

One thing that TM being in the world for 50 years has done has made people aware that meditation should be effortless. But techniques designed to imitate it, such as those published in articles and books that are said to produce the "Relaxation Response", also do not produce transcending, nor the same benefits.

I have taught TM to many people who have previously tried these techniques and all said that TM was much, much better. The details are important. Exactly how TM has taught and the exact sounds used in meditation make the difference. It is even not enough that the mind transcends. The exact resonance produced to the TM mantras during the transcending process is extremely important in producing TM's benefits. Arbitrarily taking a sound to meditate on would not only be ineffective but could be dangerous.

I know that modern science knows little about this area of life. In principle, the only way to fully comprehend it is to develop that infinite level of mind and know it from there. Trying to discover it or rediscover it from the objective means of science is just an example of the blind leading the blind. It is a waste of time and life.

On the other hand, in principle, the mind can transcend on any sensory modality; sound, touch, sight, taste, smell. In fact, that is what the mind does. It is always moving towards greater happiness and bliss, and each time it makes a move in that direction, however small, it has transcended to some degree. Every time we feel a wave of love, inspiration, happiness, laughter, or broader comprehension we are transcending to some degree.

The Transcendental Meditation technique facilitates all these modes of transcending. While systematically taking the mind through the transcending process, it provides a coherent style of deep rest that removes the stresses that block transcending. The effect of this, which is well documented by the scientific research, is to habituate the neurophysiology to transcend in all situations. As a result of regular practice, one experiences more inspiration, more happiness, more laughter, and broader comprehension in all areas of life.

Everything in life gets better and is more fun and more profound. Meditators, for example, are great audiences. I have seen many occasions in which musical performers, actors, poets, lecturers have commented on the amazing atmosphere of bliss and coherence the meditating audiences produce.

And, as a side effect, coherence is created in collective consciousness, reducing the tendencies for crime, war, terrorism, and improving the quality of life on every dimension. More transcending is what civilization

needs to get out of its discontents and to end this nightmare that we call history.

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