

# Feeling Better, Living Longer, Accomplishing More, and Paying Less for Medical Bills

Dr. Alarik Arenander, Director, Brain Research Institute

## Introduction

We live in a time of remarkable transformation. Unfortunately, rapid change along with growing responsibility can be very stressful. Too much stress can harm both our mental and our physical health, and this outcome will undermine our effectiveness at work and our quality of life. Since stress is considered a factor in almost 90% of all disease, it can also drive up our medical bills. We need to protect ourselves from undue stress.

Dozens of methods for managing stress are available in the world today. Research, however, suggests substantial differences in the effectiveness of different stress reduction procedures, including various meditation and relaxation techniques [1-5]. Comparative studies have found that the Transcendental Meditation (TM) technique is the most effective method of stress elimination [1-5]. The effectiveness of this program appears to result from physiological and psychological effects that are the opposite of chronic stress. The physiological effects of the TM technique include:

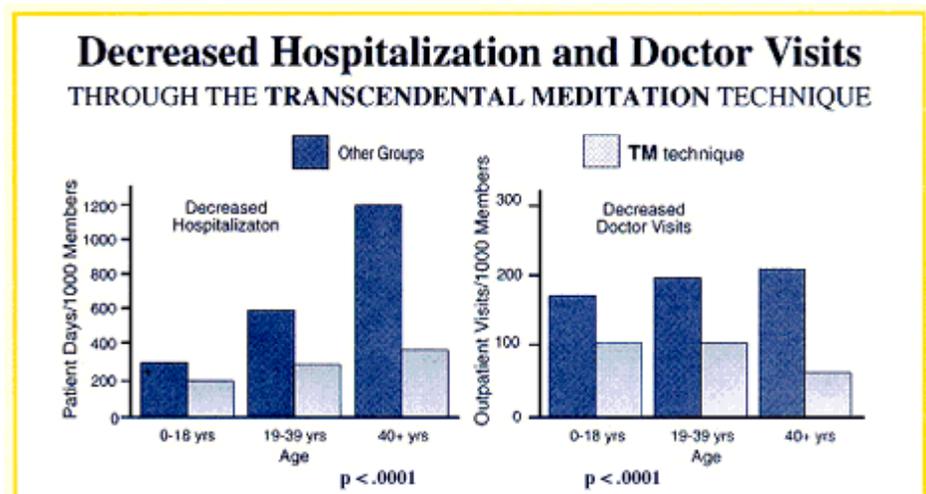
- lower baseline cortisol levels [6-9],
- reduced respiratory rate [2, 10, 11],
- reduced blood pressure (in both normal [12-14] and hypertensive patients [15, 16]),
- decreased heart rate [2, 11, 17],
- global reduction in somatic arousal [18], and
- increased coherent functioning of the brain [19-21].

## TM Reduces Medical Utilization and Expenses

The practice of the TM technique is not only enjoyable and rejuvenating; it also profoundly improves health. For example, a five-year study of medical care utilization statistics on 2,000 people throughout the U.S. who regularly practiced the Transcendental Meditation technique, as compared to a control group, found that their overall rate of hospitalization was half (<56%) of the norm. The group practicing the Transcendental Meditation technique had fewer hospital admissions in all disease categories compared to the norm—including 87% less hospitalization for cardiovascular disease, 55% less for cancer, 87% less for diseases of the nervous system, and 73% less for nose, throat, and lung problems [22].

This figure shows a comparison of decreased hospitalization and doctor visits for two groups of individuals: those who practice the TM technique and those who do not practice the technique with similar demographically characteristics. The control population of non-meditators (“Other Groups”) demonstrates the

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normal decline in health reflected in an increase with age of patient days (left graph) and outpatient visits (right graph). Notice that the individuals practicing the TM technique do not show the normal increase in healthcare utilization. The difference in healthcare utilization between the two populations becomes more remarkable with increasing age. References: *Psychosomatic Medicine* 49 (1987): 493–507; *American Journal of Health Promotion* (1997) 135–144.

In addition, several large-scale studies indicate that the TM program can reduce medical costs by as much as 12% per year and that TM is more cost-effective than drugs for treating high blood pressure [23-27].

### What is the TM Technique?

TM is a simple, natural mental technique practiced for 15 to 20 minutes in the morning and evening in a comfortable sitting position. TM enables the mind to settle down effortlessly and spontaneously to experience more refined, quieter states of the thinking process. During TM practice, this settling process culminates in the experience of “pure consciousness,” a unique state of profound inner wakefulness with minimal mental activity. This state of “restful alertness” is accompanied by a corresponding deep physiological rest and increased brain orderliness [11, 17, 18], which in turn lead to a wide range of health benefits in daily life (see below).

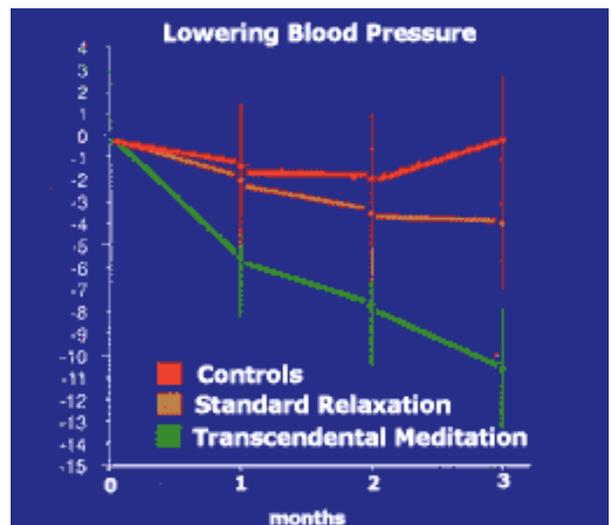
Over 6 million people worldwide practice the TM technique. The TM technique requires no belief or lifestyle change, and can be easily learned by anyone of any age, level of education, race, occupation, religion, or ethnicity.

### Scientific Validation

More than 600 scientific studies have evaluated various effects of the TM program and have confirmed that the practice confers a wide range of benefits for mental, physical, and emotional health. Research also shows that the benefits of the TM technique are uniquely more effective than those of other forms of meditation and relaxation [1]. Over the last decade, the National Institutes of Health has funded more than \$18 million in research to examine the cardiovascular benefits of TM practice, since heart disease is the leading cause of death in the U.S. Research has shown that the cardiovascular benefits of TM practice include:

- **Reduced cardiovascular disease** [28, 29],.
- **Reduction of high blood pressure** [15, 16],
- **Regression of atherosclerosis**[30],
- **Improvement in angina pectoris** [31],
- **Improved heart functioning** [32], and
- **Decreased cardiovascular mortality** [33, 34].

This graph depicts the results of an NIH funded, randomized clinical trials of the stress-reducing meditation of Transcendental Meditation. The results indicate the practice of TM was 2 1/2 times more effective in reducing systolic and diastolic blood pressure than conventional relaxation. Effects were comparable to standard pharmacological treatment, but without the numerous adverse side-effects or high cost of hypertensive drugs. References: R.H. Schneider et al., *Hypertension* **26** (1995): 820-827 & **28** (1996): 228-248.



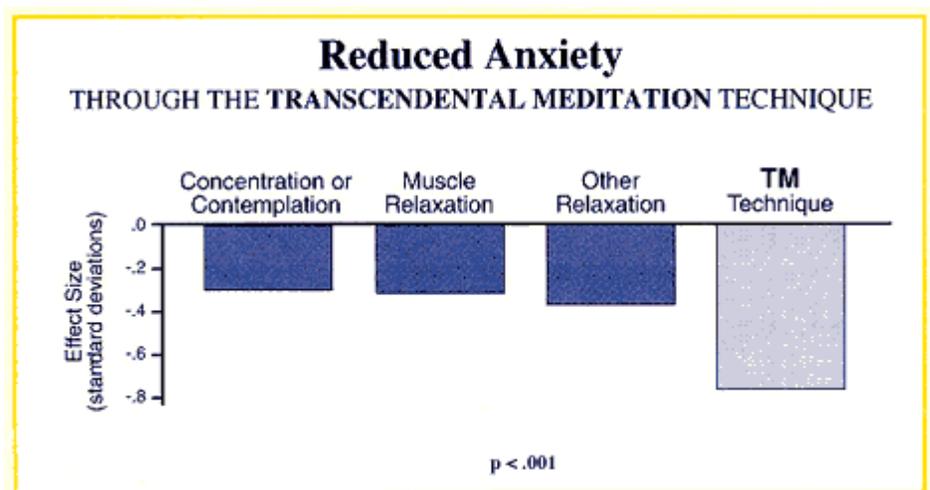
It is remarkable that the simple mental technique of Transcendental Meditation can lead to such quick and extensive balancing of the mind and body.

**Meta-analyses.** Given that many other approaches to relaxation and stress management exist, how can one truly know what works and what doesn't? Science has provided a powerful means to evaluate new technologies (including stress-reduction techniques) known as *meta-analysis*. Meta-analysis is a statistical method for synthesizing the results of many research studies. It lets researchers determine the effect size and validity of an intervention more accurately and reliably than is possible with a single study.

Meta-analyses have shown that the TM program is the most effective method available to relieve stress. This effectiveness results in the following important benefits:

- **Decreased unhealthy habits and lifestyle risk factors.** Meta-analysis of 543 studies found that the TM program was more effective than other meditation and relaxation procedures in decreasing hypertension, reducing anxiety, improving psychological health, and reducing tobacco, alcohol and illegal drug use [1].
- **Decreased substance abuse.** Meta-analysis of 198 studies found that the TM program was uniquely effective for the treatment and prevention of drug, alcohol, and cigarette abuse [5, 35].
- **Stress reduction (stress is a risk factor for over 90% of human illness).** Meta-analysis of 146 independent outcomes found that the TM technique was significantly more effective than a placebo or other relaxation techniques in reducing anxiety (stress) [4, 35].
- **Unique state of deep physiological rest.** Meta-analysis of 31 studies that compared the TM program with ordinary rest found that TM produced higher basal skin resistance, lower respiration, lower plasma lactate, and lower baseline levels of spontaneous skin resistance responses, respiration rate, heart rate, and plasma lactate [2, 35].
- **Increased self-actualization and psychological health.** Meta-analysis of 42 treatment outcomes found that the TM program was more effective than other forms of meditation and relaxation procedures in increasing self-actualization, which is a measure of mental and emotional well-being and overall psychological health [3, 35].

This figure shows the results of a statistical meta-analysis conducted at Stanford University of all available studies at the time (146 independent outcomes). It indicates that the effect of the Transcendental Meditation program on reducing trait anxiety was much greater than that of concentration and contemplation or forms of physical relaxation,



including muscle relaxation. Analysis showed that these positive results could not be attributed to subject expectation, experimenter bias, or quality of research design. References: *Journal of Clinical Psychology* 45 (1989): 957–974; *Journal of Clinical Psychology* 33 (1977): 1076–1078.

## Conclusion

We all wish to be healthy and to live long, productive, happy lives. In response to this desire, our society is now beginning to use a variety of stress-management techniques to improve quality of life. However, more than 30 years of scientific research, as well as the reports of millions of individuals of all nationalities and cultural and ethnic backgrounds, indicate that the TM program is the most effective stress-management technique available. It improves physical and mental health [3, 4, 5, 35], and reduces unnecessary medication use, medical testing, treatment, and costs. In addition, research demonstrates that the practice of TM increases creativity and intelligence. Consequently, the TM program offers a means for any individual to gain both deep, integrated rest and increased mental alertness—a sound basis for dynamic activity. Practice of the TM technique can therefore make a profound impact on individual health and well-being while greatly reducing healthcare-related costs.

## For more information

Contact the author at the Brain Research Institute, Dr. Alarik Arenander or visit our websites (<http://www.ebrainmatrix.org> and [www.brainresearchinstitute.org](http://www.brainresearchinstitute.org)). To learn more about the TM technique call your local Transcendental Meditation Center located in nearly every community: On the internet ([www.TM.org](http://www.TM.org)); in the yellow pages under “Transcendental Meditation,” or call by dialing 1-888-LearnTM.

## References

1. Orme-Johnson, D.W. and K.G. Walton, *All approaches to preventing or reversing effects of stress are not the same*. American Journal of Health Promotion, 1998. **12**(5): p. 297–299.
2. Dillbeck, M.C. and D.W. Orme-Johnson, *Physiological differences between Transcendental Meditation and rest*. American Psychologist, 1987. **42**: p. 879-881.
3. Alexander, C.N., M. Rainforth, and P. Gelderloos, *Transcendental Meditation, self-actualization and psychological health: A conceptual overview and statistical meta-analysis*. Journal of Social Behavior and Personality, 1991. **6**(5): p. 189-247.
4. Eppley, K., A. Abrams, and J. Shear, *Differential effects of relaxation techniques on trait anxiety: A meta-analysis*. Journal of Clinical Psychology, 1989. **45**: p. 957-974.
5. Alexander, C.N., P. Robinson, and M. Rainforth, *Treating and preventing alcohol, nicotine, and drug abuse through Transcendental Meditation: A review and statistical meta-analysis*. Alcoholism Treatment Quarterly, 1994. **11**(1/2): p. 13-87.
6. Jevning, R., A. Wilson, and J. Davidson, *Adrenocortical activity during meditation*. Hormones and Behavior, 1978. **10**: p. 54-60.
7. Jevning, R., A. Wilson, and W. Smith, *The Transcendental Meditation technique, adrenocortical activity and implications for stress*. Experientia, 1978. **34**: p. 618-619.
8. Subrahmanyam, S. and K. Porkodi, *Neurohumoral correlates of Transcendental Meditation*. Journal of Biomedicine, 1980. **1**: p. 73-88.
9. MacLean, C.R.K., et al., *Altered responses of cortisol, GH, TSH and testosterone to acute stress after four months' practice of Transcendental Meditation (TM)*. Annals of the New York Academy of Sciences, 1994. **746**: p. 381-384.
10. Gallois, P., *Modifications neurophysiologiques et respiratoires lors de la pratique des techniques de relaxation*. L'encephale, 1984. **10**: p. 139-144.

11. Wallace, R.K., *Physiological effects of Transcendental Meditation*. Science, 1970. **167**: p. 1751-1754.
12. Wallace, R.K., et al., *Systolic blood pressure and long-term practice of the Transcendental Meditation and TM-Sidhi program: Effects of TM on systolic blood pressure*. Psychosomatic Medicine, 1983. **45**(1): p. 41-46.
13. Alexander, C.N., et al., *Transcendental Meditation, mindfulness and longevity: An experimental study with the elderly*. Journal of Personality and Social Psychology, 1989. **57**(6): p. 950-964.
14. Cooper, M. and M. Aygen, *Effects of Transcendental Meditation on serum cholesterol and blood pressure*. Harefuah, Journal of the Israeli Medical Association, 1978. **95**: p. 1-2.
15. Schneider, R.H., et al., *A randomized controlled trial of stress reduction for hypertension in older African Americans*. Hypertension, 1995. **26**(5): p. 820-827.
16. Alexander, C.N., et al., *A trial of stress reduction for hypertension in older African Americans (Part II): Gender and risk subgroup analysis*. Hypertension, 1996. **28**: p. 228–237.
17. Wallace, R.K. and H. Benson, *The physiology of meditation*. Scientific American, 1972. **226**(2): p. 84-90.
18. Jevning, R., R.K. Wallace, and M. Beldebach, *The physiology of meditation: A review. A wakeful hypometabolic integrated response*. Neuroscience and Biobehavioral Reviews, 1992. **16**: p. 415-424.
19. Levine, P.H., et al., *EEG coherence during the Transcendental Meditation technique.*, in *Scientific Research on the Transcendental Meditation Program, Collected Papers*, D.W. Orme-Johnson and J.T. Forrow, Editors. 1976, Maharishi European Research University Press: Seelisberg, Switzerland. p. 187-207.
20. Orme-Johnson, D.W., *EEG coherence during transcendental consciousness*. Electroencephalography and Clinical Neurophysiology, 1977. **43**(4): p. 581–582.
21. Dillbeck, M.C. and E.C. Bronson, *Short-term longitudinal effects of the Transcendental Meditation technique on EEG power and coherence*. International Journal of Neuroscience, 1981. **14**: p. 147–151.
22. Orme-Johnson, D.W., *Medical care utilization and the Transcendental Meditation program*. Psychosomatic Medicine, 1987. **49**: p. 493-507.
23. Herron, R.E. and K. Cavanaugh, *Can the Transcendental Meditation Program Reduce the Medical Expenditures of Older People? A Longitudinal Cost Reduction Study in Canada*. Journal of Social Behavior and Personality, (In press).
24. Herron, R.E., *The impact of Transcendental Meditation practice on medical expenditures*. Dissertation Abstracts International, 1993. **53**(12): p. 4219-A.
25. Herron, R.E., et al., *The impact of the Transcendental Meditation program on government payments to physicians in Quebec*. American Journal of Health Promotion, 1996. **10**(3): p. 208-216.
26. Herron, R.E., et al., *Cost-effective hypertension management: Comparison of drug therapies with an alternative program*. American Journal of Managed Care, 1996. **II**(4): p. 427-437.
27. Herron, R.E. and S.L. Hillis, *The Impact of the Transcendental Meditation Program on Government Payments to Physicians in Quebec: An Update*. American Journal of Health Promotion, 2000. **14**(5): p. 284–291.
28. Barnes, V., et al., *Stress, stress reduction, and hypertension in African Americans: An updated review*. Journal of the National Medical Association, 1997. **89**(7): p. 464–476.
29. Schneider, R.H., C.N. Alexander, and R.K. Wallace, *In search of an optimal behavioral treatment for hypertension: A review and focus on Transcendental*

- Meditation.*, in *Personality, Elevated Blood Pressure, and Essential Hypertension.*, E. Johnson, G. W., and S. Julius, Editors. 1992, Hemisphere Publishing Corp: Washington, D.C. p. 291-312.
30. Castillo-Richmond, A., et al., *Effects of stress reduction on carotid atherosclerosis in hypertensive African Americans.* *Stroke*, 2000. **31**: p. 568–573.
  31. Zamarra, J.W., et al., *Usefulness of the Transcendental Meditation program in the treatment of patients with coronary artery disease.* *American Journal of Cardiology*, 1996. **77**: p. 867–870.
  32. Barnes, V.A., et al., *Acute effects of Transcendental Meditation on hemodynamic functioning in middle-aged adults.* *Psychosomatic Medicine*, 1999. **61**: p. 525–531.
  33. Alexander, C.N., et al., *A randomized controlled trial of stress reduction on cardiovascular and all-cause mortality in the elderly: Results of 8 and 15 year follow-ups.* *Circulation (abstract)*, 1996. **93**(3): p. 19.
  34. Barnes, V.A., et al., *Impact of Transcendental Meditation on Mortality in Older African Americans with Hypertension — Eight Year Follow-up.* *Journal of Social Behavior and Personality*, (In press).
  35. Alexander, C.N., et al., *The effects of Transcendental Meditation compared to other methods of relaxation and meditation in reducing risk factors, morbidity, and mortality.* *Homeostasis*, 1994. **35**(4-5): p. 243-264.