

Transcendental Meditation: Overview of Research on Health

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Transcendental Meditation (TM), as taught by Maharishi Mahesh Yogi, is a simple, effortless technique practised for 15-20 minutes twice daily. TM is taught by qualified teachers who have completed an extensive training programme. It requires no belief, nor any change in life-style or diet, and can be easily learned by anyone regardless of age, education, or culture. More than five million people have learned the technique worldwide.

Since 1970, more than 600 research studies on TM have been conducted at over 250 universities and research institutions in 30 countries. Many have appeared in peer-reviewed journals. In recent years, a multicentre American team has attracted grants totalling over \$24 million, principally from the US National Institutes of Health, for research on TM and cardiovascular health in older African-Americans (a high-risk group for vascular disease). These and other randomized control trials have shown:

- TM was more effective in reducing mild hypertension than progressive muscular relaxation or a 'usual care' programme.¹
- TM reduced blood pressure effectively in both sexes and across a range of risk subgroups;² cost-effectiveness compared favourably with drugs.³
- Follow-up studies confirmed sustained blood pressure reductions with TM.⁴
- TM reduced carotid artery atherosclerosis compared to controls who received health education.⁵
- Pooled data from two randomized studies on hypertensive older people showed that TM was associated with a 23% reduction in all-cause mortality and a 30% decrease in cardiovascular deaths.^{6, 7}
- In patients with stable coronary heart disease (CHD), TM decreased both blood pressure and insulin resistance – key components of the 'metabolic syndrome' associated with many major disorders of modern society, including CHD, type 2 diabetes, and hypertensive disease. TM also increased stability of the cardiac autonomic nervous system.⁸
- TM improved functional capacity and quality of life in patients with chronic heart failure. TM subjects also showed reduced depression and had fewer hospitalizations.⁹
- In pre-hypertensive adolescents, TM improved blood pressure at rest, during acute laboratory stress and during normal daily activity.¹⁰

A systematic review and meta-analysis of 107 published studies on stress reduction and high blood pressure found that TM significantly reduced both systolic and diastolic blood pressure, while other methods of meditation and relaxation, biofeedback, and stress management did not produce significant effects.¹¹ A second meta-analysis by an independent team confirmed that TM leads to clinically important reductions in blood pressure.¹² The authors conclude that sustained blood pressure changes of the magnitude produced by TM would be associated with substantially decreased risk of heart attack and stroke, the leading cause of mortality worldwide. These findings

corroborate earlier reviews documenting benefits of TM in prevention and treatment of hypertension and cardiovascular disease.¹³⁻¹⁶

Controlled research on TM has also found: improved exercise tolerance in angina patients with documented coronary lesions; reduction of elevated cholesterol (independent of dietary changes); improvements in clinical and ECG variables in patients with cardiac syndrome X (anginal pain, positive exercise ECG, and normal angiogram); lower cortisol levels and reduced cardiovascular risk factors in post-menopausal women.¹⁷⁻²⁰

A meticulously-controlled randomized study from Harvard found that elderly people who learned TM showed greater improvement on measures of mental health, cognitive flexibility, blood pressure, and well being, and lower mortality than three comparison groups from the same residential institutions (who learned either a relaxation technique, 'mindfulness' training, or received no treatment).²¹

Many studies have documented benefits from TM for mental health and reduced substance use.^{9, 21-31, 65-77} A series of meta-analyses found that TM led to significantly greater reductions in use of tobacco, alcohol, and illicit drugs than conventional programmes, whether or not these were combined with relaxation techniques.²² Earlier meta-analyses found that TM was more than twice as effective as other meditation and relaxation procedures in reducing anxiety and improving overall mental health.^{23, 24} Results remained robust after controlling for strength of design and exclusion of studies by experimenters with a known interest in TM.²³

A randomized control trial found that TM was more effective than psychotherapy in decreasing multiple features of post-traumatic stress disorder in war veterans, with reductions in depression, anxiety, insomnia, severity of delayed stress syndrome, emotional numbness, alcohol consumption, family problems, and difficulty in obtaining employment.²⁶ In another randomized study, TM was superior to an educational corporate stress management programme in reducing anxiety and depression, and improving self-concept, among government employees.²⁷

Research on health care utilization indicates that TM could play an important role in primary prevention and reduction of health costs. A 14-year retrospective study of 2836 people enrolled in the Quebec provincial health insurance scheme found that, after beginning TM, subjects showed a progressive decline in payments to physicians compared to controls. The average annual difference was 13 percent, leading to a cumulative cost reduction of 55 percent after six years.^{32, 33}

A separate 14-year analysis examined changes in medical expenditure in 320 Quebec citizens over 65 years, an age group for whom health care needs and costs generally rise sharply. After subjects learned TM, changes in payments decreased compared to matched controls, with a cumulative reduction of 64.2 percent over five years.³⁴

Earlier research using data from Blue Cross/Blue Shield, a major US health insurer, found that both hospital admissions and outpatient consultations were over 50% fewer for subjects practising TM compared to norms and controls. In the over-40 age group, the reduction was over 70 percent. Hospital admissions were markedly reduced in all 17 disease categories studied.^{35, 36}

The physiological basis of TM's effects has been extensively investigated, revealing a unique state of restful alertness during the technique, characterized by increased integration in brain functioning and by metabolic, electrophysiological and biochemical markers of deep rest. Regular practice is associated with sustained increases in brain integration and reductions in psychophysiological correlates of stress and ageing.^{37-54, 21}

Educational research has shown that TM develops intelligence and creativity, increases brain integration in college students; promotes cognitive and self development; increases academic achievement in school, university, and postgraduate students; improves perception and mind-body co-ordination; decreases negative school behaviour in adolescents; and reduces symptoms of ADHD.^{37, 55-66}

TM has also been found to improve occupational health and performance,^{27, 67-70} and to facilitate effective rehabilitation of offenders.⁷¹⁻⁷⁷

Finally, more than 50 controlled studies (including prospective projects) have found that collective practice of TM (and its advanced techniques, particularly Yogic Flying) by a small fraction of the total population can improve the collective health of society as a whole, as measured by reductions in crime, accidents, unemployment, and both civil and international conflict, and improvements in positive trends throughout the community, nation, and world.⁷⁸⁻⁹²

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