Treating 25,000 Patients in Germany with Maharishi Ayurveda – Overview on Research of Maharishi Ayurveda

Ayurveda in Germany

Patients coming for treaments to an ayurvedic clinic in the west mostly come for chronic conditions – and most of them have already been treated unsuccessfully for their ailments by modern medicine or other naturopathy.

Since the concepts of Ayurveda normally are unknown to westerners, at the Maharishi Ayurveda Bad Ems Clinic we adopted an approach to also educate our patients intensively about the basic Ayurvedic principles for their well being, to enable them to further improve their health back home by adopting a more healthy lifestyle.

That is why their Panchakarma treatment is accompanied by other activities such as yoga and breathing exercises, Transcendental Meditation, Gandharva-Veda music therapy, cooking classes, a series of educational videos about Maharishi Ayurveda with tips for practical life, evening lectures with presentations and talks by the Ayurveda-trained doctors and health consultants and daily meetings with the treating physician.

During their stay the patients live in the adjoined four star hotel. The Panchakarma food is specially prepared and served in a separate restaurant by the clinic staff. The spa hotel features a newly renovated, spacious wellness and spa landscape with a host of saunas and pools alongside its thermal swimming pool that is fed from a healing spring.



Maharishi Ayurveda Health Center and Häcker's Grand Hotel, situated in the former summer palace of Kaiser Wilhelm I., Bad Ems, Germany.

About 25,000 patients have been visiting our place since the founding in 1992, two thirds of them coming repeatedly or recommending the treatments to friends and relatives. The Maharishi Ayurveda Health Clinic has been awarded with a number of national and international prestigious awards for its outstanding medical quality and services.

Maharishi Ayurveda – complete Ayurveda

At the end of the 1970s, the Veda and Science project of Maharishi Mahesh Yogi brought together scientists and medical experts from the East and the West. During many years of intensive work, also integrating the knowledge of several selected family traditions, they succeeded in restoring the scattered parts of the mosaic of Ayurveda and Veda to its full potential and giving consciousness its rightful place as the basis for a balanced mind and body.

Maharishi Ayurveda – now available throughout the world – is recognized for its authenticity and the high standard level, developed under the guidance of Maharishi Mahesh Yogi over 30 years. His dedication to inspiring scientific research on the practices and benefits of Ayurveda, with the goal of creating a disease free society, has contributed to the world wide recognition of Ayurveda.

Ayurveda is proven to be effective not only for preventing illness, but also for furthering an understanding of the full potential of human health and how to develop it.

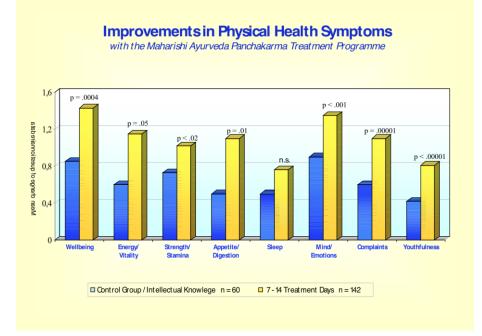
Scientific Findings

A series of preliminary scientific studies document the impressive improvement of physical health as well as the improvement of overall psychological wellbeing through the balancing and detoxifying effect of Maharishi Panchakarma. We will present selected reports in this article.

The first study was done in the beginning of the eighties in the first International Maharishi Ayurveda health center in the USA.

142 test persons who have completed one to two weeks of Panchakarma treatment have been compared with a controlled group of 60 people using a common health treatment system. Both groups have taken a survey to record their changes in their health status.

The Panchakarma patients showed an improvement in health consistently in all scales:

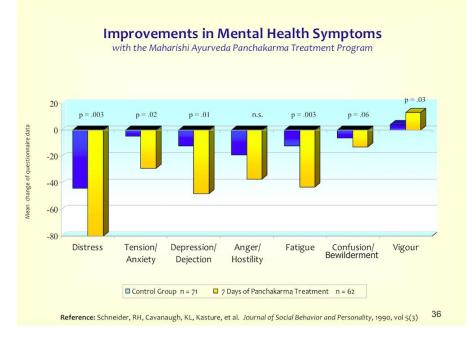


Questionnaire data about physical and psychological wellbeing

Increased well-being, more energy and vitality and after the Panchakarma treatment more energy and endurance. Their appetite and digestion got better, they had deeper sleep and their sleep pattern improved with less interruptions. Their spirit, feelings and emotions improved. Also an increased sense of youthfulness was reported (Schneider RH, 1990a).

A particular feature of Panchakarma treatment is that it is a purification of both body and mind. Therefore it is likely that an improvement is also noticed in the mental state.

In a second survey researchers measured the improvement in the psychological health with a standardized psychosomatic test in 62 persons who completed a one week Panchakarma treatment while the controlled group studied intellectual knowledge about Maharishi Ayurveda. Even after this short intervention



Panchakarma, the tension and fear of the patients clearly decreased due to the relaxing effect of the treatments. It also brought about decreased depression and the patients were less angry, less tired, less confused and at the same time they noticed a definite increase in energy (Schneider RH, 1990b).

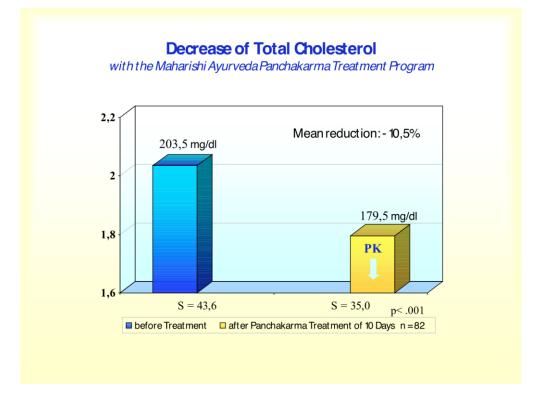
The third study of this series relates amazingly to memory performance. It has been shown that patients after the Panchakarma treatment achieved enhanced memory performance in all analyzed scales.

Heart and Cholesterol Disorders

Ayurveda doctors repeatedly find that blood cholesterol levels are markedly reduced as a result of subjects undergoing treatment with the Ayurveda purification therapy Panchakarma. This has also been supported scientifically by a study from Freiburg University, Germany.

130 subjects were observed medically during the course of a ten-day Maharishi Ayurveda Panchakarma purification program. Within two weeks, total cholesterol levels decreased 11% on average, from 203.5 mg% to 179.5 mg%. In addition, the level of LDL-cholesterol, which is particularly harmful to the arterial walls, dropped by about 8.7%. This, in turn, reduces the risk of heart attack or heart problems by about 17.8%, according to Rainer Waldschütz, M.D., the author of the study (Waldschütz R, 1988).

Additional Effects of the Ayurveda Panchakarma Purification Program tested in the same study, showed that these subjects experienced increased well-being, as indicated by self-reported subjectively assessed improvements. For example, within two weeks, patients reported feeling less excitable and aggressive and more emotionally stable. Subjects also reported feeling more open and ready to interact with others, and experienced greater joy from their own achievements (Waldschütz R, 1988).



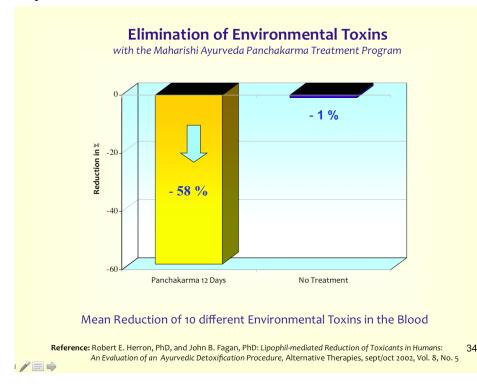
Reduced levels of Banned PCBs and Agrochemicals in Blood

This is specially important since medical experts calculate that, in Germany, 30% of the population suffer from environmentally induced diseases. Most of these hazardous environmental toxins are lipophilic substances that accumulate in the fatty tissues of the body. These fat-soluble toxins are associated with a range of disorders such as hormone disruption, immune system suppression, allergies, diseases of the liver and skin, various types of cancer, neurological illness, reproductive disorders and deformities.

A published blind study with 88 subjects demonstrated that Maharishi Ayurveda Panchakarma therapy can eliminate up to 50% of detectable toxins in the blood. The levels of environmentally toxic substances, banned PCBs and agrochemicals in the blood such as polychlorinated biphenyl (PCB's) and pesticides in the body, were significantly reduced by Panchakarma therapy without damaging side effects.

Blood samples from two cross-sectional groups were assayed for 17 lipophilic toxicants, including 9 polychlorinated biphenyl (PCB) congeners and 8 pesticides and metabolites, such as DDE, a by-product of DDT. The specific PCBs and pesticides that were studied had either been previously linked to major health problems or had been of high concern for their potential toxicity. The results showed that blood levels of PCBs and several pesticides were significantly lower than the controls in the detoxification group which had undergone up to 18 Panchakarma treatments in the years before.

An alarming finding of this study was that PCB and DDE levels appear to be unexpectedly high in the general population, and may actually be increasing. This is surprising, since these toxicants were banned decades ago in many countries. However, they have not disappeared from the environment since they have half-lives that are several years in duration. Also they are still entering the food chain through imports.



Blood samples from 15 subjects were assayed, before and after the Panchakarma-treatment The results of the twomonth longitudinal study showed that PCBs and Beta-HCH levels were reduced by 46 percent and 58 percent respectively in the Maharishi Ayurveda detoxification group. Without this intervention, the drop in PCBs and Beta-HCH over two months was only a fraction of one percent (Patil V, 2002). Previously, no method had been scientifically verified to reduce the levels of these lipid-soluble toxicants in the

human body without causing negative side effects. Within 12 days, Panchakarma therapy eliminated a large proportion of these fat-soluble toxins from the body.

This research indicates that Maharishi Panchakarma is a powerful means for purifying and rejuvenating the body as well as improving mental wellbeing.

Maharishi Ayurveda Herbal Supplements

Quality Seal for Maharishi Ayurveda Products

Maharishi Ayurveda herbal products restore and maintain balance where imbalance exists. The formulations are ancient, time-tested and effective, based on written records dating back thousands of years.

All Maharishi Ayurveda product manufacturing processes such as cultivation, harvesting, processing and storage are supervised by master Vaidyas that have undergone many years of training in the selection, preparation and formulation of herbs.

Besides maintaining the purity of traditional formulations Maharishi Ayurveda uses only ingredients and herbal products that meet rigorous standards for safety and employs the highest standards of quality control. Maharishi Ayurveda products are tested before, during and after manufacture and then again before distribution by independent laboratories in India and Europe.

Maharishi Ayurveda Products' production facilities in India have been awarded the following certifications:

- ISO 9001:2008 (International Quality Management Standard)
- ISO 22000:2005 (International Food Safety Management System),
- HACCP (Food Safety Concept, prescribed in EC Regulation 852/2004),
- WHO-GMP (Guidelines of the World Health Organisation for Quality Assurance in Food Production),
- IMO (Institute for Market Ecology for Inspection and Certification according to the EU Eco Regulation).
- The GLP certificate authenticates a registered laboratory management system for all important laboratory tests and equipment calibration.

Furthermore, the effectiveness of Maharishi Ayurveda herbal products has been proven in extended scientific research carried out in the United States and Europe as well as in India. The following are research studies conducted on specific Maharishi Ayurveda herbal products:

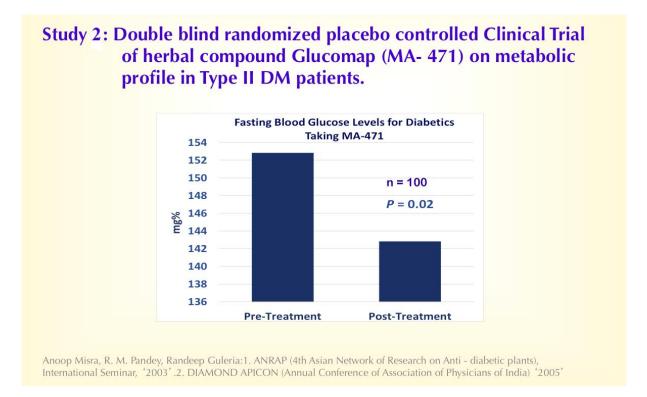
1. Hypoglycemic, Hypolipidemic and General Beneficial Effects of a Herbal Mixture MA-471. (45 participants)

Research Highlights

Supplementation of Non-Insulin Dependent Diabetes Mellitus (NIDDM) patients with MA-471 resulted in "good" or "acceptable" control in over 68% of patients. MA-471 supplementation also resulted in a significant fall in serum total cholesterol and triglycerides, and resulted in marked improvement in polyuria, fatigue, and constipation. MA-471 seemed to be more effective in patients who had diabetes for less than five years.

2. Double blind randomized placebo controlled Clinical Trial of herbal compound Glucomap (MA-471) on metabolic profile in Type II DM patients (100 participants).

See the graph below.



Research Highlights

On observation, Glucomap (MA-471) has shown significant reduction in fasting blood glucose levels & in glycosylated haemoglobin levels. No adverse effects were reported in patients receiving Glucomap (MA-471).

Further study is required with larger sample size to evaluate the anti-hyperglycemic potential of the drug.

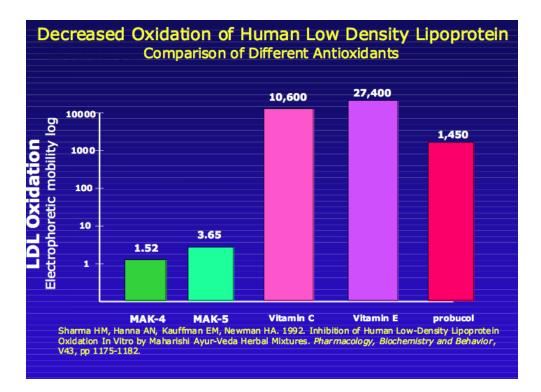
3. Evaluating the Effect of Glucomap In Type II Diabetes Mellitus. (52 participants)

Research Highlights

This six months study in 52 cases of type II diabetics concluded that Glucomap is a safe, anti-diabetic drug. This drug shows its effect even with insulin therapy, it is lipid neutral and has no negative side effects on renal or liver functions.

It brings down HbA1c on an average by 1%. Its effect is more marked in newly diagnosed type II diabetics and mild cases already receiving insulin. We also concluded that this drug is weight neutral. Interesting thing we observed was about its significant effect on triglyceride especially all those who had triglyceride 250mg and BMI 27.

4. Inhibition of Human Low-Density Lipoprotein Oxidation In Vitro by Maharishi Ayurveda Herbal Mixtures [<u>MAK-4</u>, <u>MAK-5</u>, <u>MA-631</u>, and <u>Maharishi Coffee</u> <u>Substitute</u>]



Please note that the vertical scale of the diagram is logarithmic, demonstrating , for example a 6500-fold greater effectiveness of MAK-4 than vitamin C, and an 18000-fold greater effectiveness than vitamin E.

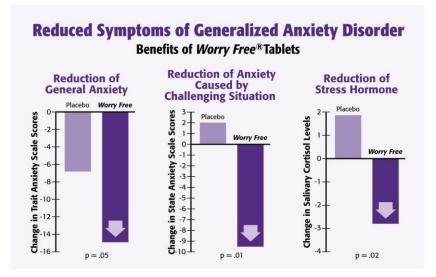
In this study on the in vitro inhibition of human LDL oxidation (Sharma HM, et al 1992), the rasayanas (health-promoting herbal mixtures) <u>MAK-4</u>, <u>MAK-5</u>, <u>MA-631</u>, and <u>Maharishi Coffee Substitute</u>, were compared to the antioxidants vitamin C, vitamin E, and probucol (an antioxidant drug). All four rasayanas showed more than a 1000-fold greater inhibition of cupric ion-catalyzed LDL oxidation, as compared to vitamin C, vitamin E, and probucol (p<0.0001).

5. Effect of Herbal Mixtures <u>MAK-4</u> and <u>MAK-5</u> on Susceptibility of Human LDL to Oxidation

Oxidation of low-density lipoprotein (LDL) plays a central role in the pathogenesis of atherosclerosis. This study investigated the in vivo antioxidant activity of MAK-4 and MAK-5 in a clinical setting, and investigated the in vitro antioxidant properties of MAK-4 (Hanna AN, et al. 1996). Both the aqueous and alcoholic extracts of MAK-4 inhibited endothelial cell (EC)- and soybean lipoxygenase (SLP)-induced LDL oxidation in a concentration-dependent manner. The agent concentrations (microgram/mL) which inhibited 50% (IC50) of EC- and SLP-induced LDL oxidation, respectively, were 150.0 +/- 10.0 and 488.3 +/- 41.9 for the aqueous extract, and 69.3 +/- 8.1 and 128.3 +/- 18.9 for the alcoholic extract. In vitro pretreatment of LDL with MAK-4 increased the resistance of LDL to Cu+2-catalyzed LDL oxidation. Both the aqueous and alcoholic extracts inhibited free radical generation in a concentration-dependent manner. The aqueous extract, and 3.64 +/- 1.24 for the alcoholic extract; addition of both extracts showed a synergistic interaction. In hyperlipidemic patients, MAK-4 and MAK-5 increased resistance of LDL to oxidation by Cu+2 and EC.

These results suggest that <u>MAK-4</u> and <u>MAK-5</u> protect LDL from oxidation and may be useful in the prevention and treatment of atherosclerosis.

6. Effects of a traditional herbal supplement on anxiety in patients with generalized anxiety disorder



Individuals diagnosed with general anxiety disorder were randomly assigned to receive either <u>Worry</u> <u>Free</u>' or a placebo (Mills PJ, et al. 2002). After three months, those taking <u>Worry Free</u> showed significantly reduced general anxiety (trait anxiety), reduced anxiety in response to a challenging situation (public speaking), and reduction in salivary cortisol (cortisol increases during stress).

Summary of Scientific Research on Maharishi's Transcendental Meditation

The role of pragya aparadha (error of the intellect) in the development of all disease plays a key role in Ayurveda. Also the positive influence of a consciousness experienenced in dhyan in prevention and cure is a well known fact in all classical Ayurvedic texts. The vedic technology of Transcendental Meditation as taught by His Holiness Maharishi Mahesh Yogi, enables the mind in a short time to regularly experience the state of unbounded awareness, complete silence, to nourish and improve all the qualitites of mind and body.

The scientific research on the Transcendental Meditation and TM-Sidhi program of Maharishi Mahesh Yogi is the largest and strongest body of research in the world on any program to develop human potential. The more than 600 scientific studies conducted at 200 independent universities and institutions in 33 countries and published in over 100 leading scientific journals have documented that this technology benefits every sphere of life: physiological, psychological, sociological, and ecological. The findings in each area of study have been replicated many times, and meta-analyses, which are the most quantitatively rigorous means to review a body of research, have found a high degree of consistency of the results (Ferguson PC 1981, Eppley KR et al. 1989, Dillbeck M C 1987, Alexander CN 1991, Alexander CN 1994.). Studies using the most sophisticated, rigorous research methodologies that are designed to prove causality have strongly verified and extended preliminary findings. This demonstrates that Maharishi's Transcendental Meditation and TM-Sidhi program causes the wide range of benefits in mental potential, health, and social behavior.

Research conducted around the world documents that the program is effective for all cultural and ethnic groups. All age groups benefit, from increased alertness in infants of meditating parents to increased health, happiness, and longevity in meditating elderly. People spanning the full range of socioeconomic levels and intellectual abilities benefit, again indicating the universality of Maharishi's program.

This body of research is unique in the extent of its cross validation, which means that the findings are validated by many different types of physiological, psychological, and sociological measures. For example, the finding that Maharishi's Transcendental Meditation and TM-Sidhi program decreases stress is validated by physiological changes such as decreased cortisol (the major stress hormone), decreased muscle tension, normalization of blood pressure, increased autonomic stability, and increased EEG coherence. At the same time, a variety of psychological changes also indicates decreased stress, including decreased anxiety and depression, decreased post-traumatic stress syndrome, and increased self-actualization. Likewise, stress reduction is demonstrated by the sociological changes, such as decreased hostility, increased family harmony, and reduced criminal behavior in incarcerated felons. Moreover, research extends the concept of stress reduction to the ecological level. Studies have found that the reduction of stress in meditating individuals creates an influence of harmony in the environment. Scientists have named this phenomenon the Maharishi Effect—the finding that even 1% of the population practicing the Transcendental Meditation-Sidhi program, improve the quality of life, as indicated by such changes as reduced crime and sickness in the larger society.

Physiological Benefits

Physiological state of restful alertness

The original landmark research on the physiological correlates of Maharishi's Transcendental Meditation technique was published in Science (Wallace RK 1970a), American Journal of Physiology (Wallace RK 1971), and Scientific American in (Wallace RK 1972). This research found that the Transcendental Meditation technique produces a physiological state of restful alertness. During the technique the physiology becomes deeply rested, as indicated by significant reductions in respiration, minute ventilation, tidal volume, and blood lactate, and significant increases in basal skin resistance (an index of relaxation). At the same time the physiology is alert rather than asleep, as indicated by an increased abundance of alpha waves in the EEG. These findings led researcher Dr. Keith Wallace to conclude that restful alertness is a fourth major state of consciousness, termed transcendental consciousness, that is physiologically distinct from ordinary waking, dreaming, and deep sleep (Wallace RK 1970b). Please coordinate with the numbers in the reference part...

Through regular practice of Maharishi's Transcendental Meditation technique, the physiology becomes more relaxed outside of meditation. Baseline levels of respiration rate, heart rate, plasma lactate, and skin resistance are all lower. The autonomic nervous system, which regulates vital internal processes, becomes more stable, integrated, and adaptable, as indicated by its increased ability to recover rapidly from the effects of stress.

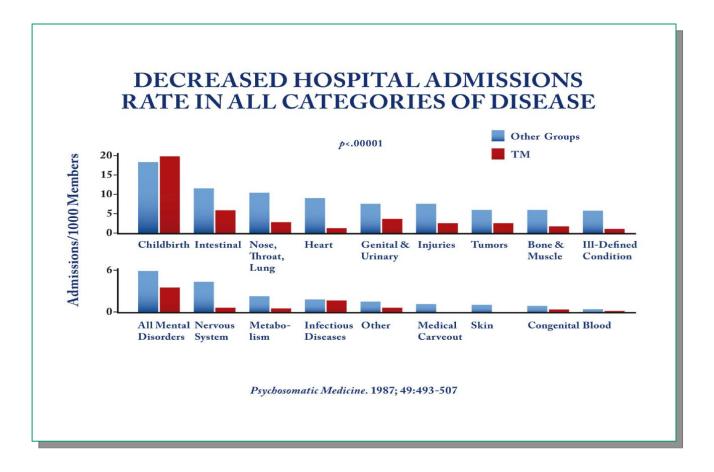
Brain changes in EEG patterns

Many other researchers have confirmed the reality of transcendental consciousness. Its consistently experienced in association with increased EEG wave coherence. Among beginners this occurs in the Alpha frequency, but later it covers all EEG frequencies.

Brain functioning becomes more orderly, as indicated by the growth of physiological correlates of creativity and intelligence, such as shorter latencies of cognitive evoked potentials, faster paired H-reflexes, shorter inspection time, and faster choice reaction time. Most importantly, the EEG coherence, initially appearing only during Transcendental Meditation, carries over into activity with an increasing ability to uphold coherent EEG function while active, which is associated with indicators of increased integration of brain functioning and higher levels of self-actualization.

Decreased Health Care Utilization

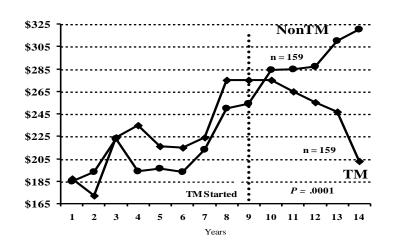
Medical researchers have found a reduction of important cardiovascular risk factors such as high blood pressure and serum cholesterol. Large health insurance studies have found that people practicing Maharishi's Transcendental Meditation and TM-Sidhi program, in all age groups combined, display a 50% reduction in both inpatient and outpatient medical care utilization compared to controls. Hospitalization is 87% lower for heart disease and 55% lower for cancer. See diagram at the next page.



And what is most remarkable, meditators over 40 years old have approximately 70% fewer medical problems than others in their age group.

When people in the age group of seniors start practising Transcendental Meditation, their health care costs consistently decline in comparison with control subject who do not, which is shown in the next graph.

Reduction of Health Care Cost in Seniors through Transcendental Meditation



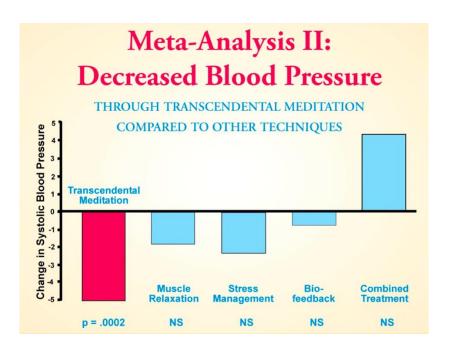
Mean annual total per capita physician expenses of participants over age 65

Data are in constant 1992 Canadian dollars. This chart shows the 1% trimmed mean. *P*-value indicates the significance of the comparison of annual rates of change between groups after TM started (Herron RE, 2005). The health care costs of the TM group decreased, after 5 years of practice, when they were at the age of 70+, to about the level it was when they were about 12-13 years younger, while the costs of the controls increased every year.

Other research has found that meditating individuals in their mid-50s have a biological age twelve years younger than their chronological age, and that people beginning the practice even at 80 years of age live longer and are healthier and happier than controls of the same age.

Cardiovascular Health Improvements

A systematic review and meta-analysis of randomized controlled trials from 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. (Rainforth MV et al. 2007). Further meta-analyses of randomized controlled trials by independent teams have confirmed that TM leads to clinically important reductions in blood pressure.(Anderson JW et al, 2008, Bai Z et al. 2015) 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. (Anderson JW et al, 2008). These findings are corroborated by other reviews addressing the role of TM in prevention and treatment of hypertension and cardiovascular disease.



American Heart Association scientific statement

A scientific statement from the American Heart Association (AHA) in 2013 concluded that Transcendental Meditation lowers blood pressure, and recommends that TM may be considered in clinical practice for prevention and treatment of hypertension. However, the AHA report found that there is not enough scientific evidence to recommend other meditation or relaxation techniques. (Brook RD, et al. 2013, Schneider RH 2013) The AHA experts concluded that significant evidence indicated that Transcendental Meditation can improve high blood pressure while there were not sufficient data to support other types of meditation for the medical treatment of high blood pressure. They also found that strong clinical evidence is also lacking to recommend yoga and other relaxation techniques for reducing blood pressure.



Psychological Benefits

Numerous studies have found that the practice of Maharishi's Transcendental Meditation and TM-Sidhi program increases broad comprehension and improves the ability to focus sharply (field independence).

Through regular practice of this program, the physiology becomes habituated to sustain the experience of restful alertness at all times. Research shows that this is the best means of reducing anxiety, depression, and anger.

Transcendental consciousness, the experience of one's higher Self, becomes a stable internal frame of reference, providing an unshakable sense of self even during dynamic activity. Meditators become better able to see another person's perspective, yet they cannot easily be swayed by social pressure to do something which they judge to be wrong. They tend to perceive the world more positively and holistically. Creativity increases, as measured by tests of both verbal and pictorial fluency, flexibility, and originality. Perception becomes more accurate and less driven by preconceptions and misconceptions. Basic memory processes improve.

School children who practice Maharishi's Transcendental Meditation technique significantly improve in their basic skills in mathematics, reading, language, and study skills within a semester. Studies of elementary school students, high school students, college students, and adults have found significant

increased IQ scores compared to non-meditating controls over the same period. A ten-year longitudinal study following meditating college students after they graduated found significant increases on holistic measures of self development (ego development) compared to data sets for graduates of three control universities matched for gender and age. The meditators reached higher levels of moral reasoning, autonomy and integration than has ever been seen before in any other group.

Among prisoners it causes positive changes in health, personality development, behavior, and reduced recidivism (lower return to prison). Studies of recidivism found that heavily criminal inmates at high security prisons who learned Maharishi's Transcendental Meditation technique had 35–40% fewer new prison terms compared to the matched controls, whereas it is known that traditional prison education, vocational training, and psychotherapy do not consistently reduce recidivism (Bleick CR et al. 1987. Rainforth M et al. 2003. Alexander CN et al. 2003). This failure is because criminal behavior is caused by deep-rooted behavioral disturbances causing lack of empathy and prononounced egotism. The ability of TM to address these disturbances is unique, bringing about a paradigm shift in criminal rehabilitation away from punishment to real restoration of mental health and empathy.

Five studies of **war veterans** and other groups with Post Traumatic Stress Disorder (PTSD) found that Maharishi's Transcendental Meditation technique produced significant decreases in symptoms including anxiety, depression, emotional numbness, family problems and other signs of post-traumatic stress disorder (Brooks JS 1985, Rosenthal N 2011, Rees B 2013 and 2014. Barnes VA 2016). Remarkably, pronounced improvements occurred within 3-4 months. So far PTSD has been considered almost intractable, and therefore symptomatic treatment has mainly been used. Because of these results, the US department of Defense has sponsored a further evaluation of the technique with 2,5 million USD.

All the research on meditation and relaxation techniques in the field of self-actualization shows that Maharishi's Transcendental Meditation technique is unparallelled in its ability to fully develop the unique potential of the individual. This technique makes a person more self-sufficient, more spontaneous, more productive, better able of meet challenges, and more capable of warm interpersonal relationships.

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Dr. Karin Pirc, MD, Ph, D., Medical Director at the Maharishi Ayurveda Privatklinik, Bad Ems, Germany, and author of 8 books on Mahahrishi Ayurveda.

Lothar Pirc, CEO, Maharishi Ayurveda Privatklinik, Bad Ems, Germany, and director of the International Maharishi Ayurveda Foundation, The Netherlands.