About the Author

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Summary of Scientific Research on Maharishi’s Transcendental Meditation and TM-Sidhi Program

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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 500 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. 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

1 Please see papers 272, 311, 356, 466, and 470 in the list below for the five meta-analyses.
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 technique, or the square root of one percent practicing the more advanced Transcendental Meditation-Sidhi program, improve the quality of life, as indicated by such changes as reduced crime and sickness in the larger society.

There are 430 studies contained in Volumes 1–5 of Scientific Research on Maharishi’s Transcendental Meditation and TM-Sidhi Program: Collected Papers. Since the publication of Volume 5 more than 75 new research and theoretical papers have been published. Volume 6 of Collected Papers is now in preparation. These studies are given below by volume with annotations that summarize the findings for each study. Each reference also includes previous publication information and/or details of the institutes or universities at which the research was conducted as well as conferences at which the research results were presented. The numbers before the references refer to the designated numbers of the papers as they are reprinted in the Collected Papers. This bibliography is also available for access through Internet at gopher: //info.miu.edu/.

Reprints of individual papers may be ordered through the Institute for Scientific Research, MIU DB 1118, 1000 N. Fourth Street, Fairfield, IA 52557-1118. The following briefly summarizes the overall research findings by category: physiological, psychological, sociological, and ecological.

**Physiological Benefits**

The original landmark research on the physiological correlates of Maharishi’s Transcendental Meditation technique was published in Science, American Journal of Physiology, and Scientific American in 1970–1972 (papers 1, 3, 4). 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 (paper 2).

Many other researchers have confirmed the reality of transcendental consciousness. Moreover, they have found that through regular practice of Maharishi’s Transcendental Meditation technique, the physiology becomes more relaxed outside of meditation as well. 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 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, increased
EEG coherence, shorter inspection time, and faster choice reaction time. 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. And what is most remarkable, meditators over 40 years old have approximately 70% fewer medical problems than others in their age group.

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 (see Part I: Physiology, Vols. 1–5, and in the recent research section).

**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. The conclusion of all the research on meditation and relaxation techniques in the field of self-actualization shows that Maharishi’s Transcendental Meditation technique is unparalleled 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 (see Part II: Psychology, Vols. 1–5, and in the recent research section).
Sociological Benefits

A quantitative review of 198 studies found that Maharishi’s Transcendental Meditation program is the most effective means of preventing and treating drug and alcohol abuse. In a study of transient, chronic alcoholics it was found that the technique produced a 65% abstinence rate and another study of high school and college drug users in a rehabilitation center found an 89% reduction in drug usage.

A study of war veterans with post-traumatic adjustment problems found that Maharishi’s Transcendental Meditation technique produced significant decreases in emotional numbness, alcohol consumption, family problems, insomnia, unemployment, and overall post-traumatic stress disorder, in comparison to controls receiving psychotherapy.

The Japanese Ministry of Labor commissioned a five-month study of the effects of Maharishi’s Transcendental Meditation program on 447 of their employees in a major heavy industry. The study found decreased physical complaints, decreased anxiety, decreased depression, decreased smoking, decreased insomnia, decreased digestive problems, and a decreased tendency towards neurosis and psychosomatic problems among those who learned this technique compared to non-meditating controls.

Maharishi’s Transcendental Meditation program has been widely used for effective prison rehabilitation. Studies indicate that it produces positive changes in health, personality development, behavior, and reduced recidivism (lower return to prison) among inmates. One study of recidivism found that 259 inmates of Folsom and San Quentin prisons and Deuel Vocational Institute in California 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. A large scale study of 11,000 prisoners and 900 staff officers in Senegal, West Africa in 1987 found that Maharishi’s Transcendental Meditation program markedly decreased prison violence and health problems and that it reduced recidivism to a mere 8% (see Part III: Sociology, Vols. 1–5, and in the recent research section).

Ecological Changes

Maharishi has brought to light that the most important single ecological consideration is a pervasive field of collective consciousness—the collective influence of the consciousness of individuals that comprise a society. Stressed individuals create an atmosphere of stress in collective consciousness that reciprocally affects the thinking and actions of every individual in that system. Maharishi maintains that crime, drug abuse, armed conflict, and other problems of society are more than just the problem of individual criminals, drug users, and conflicting factions in society. Such problems are more fundamentally symptoms of stress in collective consciousness.

Maharishi has introduced a new theoretical understanding of society, which concludes that the only practical way to handle large-scale problems is to approach them holistically by creating coherence in collective consciousness. Citing the general princi-
ple of science that the coherent elements of a system exert an influence proportional to their number squared, Maharishi has estimated that 1% of the population practicing his Transcendental Meditation technique and as few as the square root of 1% collectively practicing his Transcendental Meditation and TM-Sidhi program would be enough to create an influence of coherence in collective consciousness capable of neutralizing the stresses that are the root cause of social problems. Extensive scientific research on the city, state, national, and international levels has confirmed Maharishi’s prediction. A study of 160 U.S. cities found a significant reduction in crime trend from 1974 to 1978 in proportion to the number of people in the city who had learned the technique by 1973. The study controlled for demographic variables known to influence crime.

Research has further demonstrated that when groups practicing Maharishi’s Transcendental Meditation and TM-Sidhi program are introduced into a city, state, or country anywhere in the world that crime decreases, there are fewer traffic accidents, and the quality of life improves in that area.

Since 1979, Maharishi International University (MIU) has had a group of Transcendental Meditation and TM-Sidhi participants that has varied in size from a few hundred to over 8,000. Published research has shown that increases in the size of the group have an influence in both the U.S. and Canada, resulting in fewer violent deaths due to homicides, suicides, and traffic fatalities; a reduction in unemployment and inflation; and a general improvement in the quality of life. Studies have shown that when the MIU group, or a similar group located anywhere in the world, is sufficiently large, that is, approaching the square root of 1% of the world population (7,000), that international relations improve and regional conflicts decrease worldwide. The conclusion of this research is that the only viable means of reducing and eventually eliminating the age-old problems of society and creating world peace is the ecological and truly systemic approach of creating coherence in collective consciousness through Maharishi’s Transcendental Meditation and TM-Sidhi program.

This remarkable body of research showing that Maharishi’s Transcendental Meditation and TM-Sidhi program produces basic improvements on all levels of life—health, mental potential, social behavior, and world peace—confirms that this technology of consciousness operates on the most fundamental level of nature’s functioning, enlivening the unified field of natural law in the consciousness of the individual and in society, so that life may be lived in accord with natural law, creating a state of Heaven on Earth (see Part III: Sociology, Findings Reflecting Growth of Coherence in Collective Consciousness, Vols. 1–5, and in the recent research section).
The papers are organized chronologically, and by sections, beginning with paper number 1 on the physiological effects of the Transcendental Meditation technique, published in *Science* in 1970 by Dr. Keith Wallace, and ending with paper 508 on world peace by Dr. Bevan Morris, recently published in *Modern Science and Vedic Science*. With some minor variation, each of the five volumes and the recent research section is divided into four parts: physiological studies, psychological studies, sociological studies, and theoretical and review papers. Of special interest are the 40 studies on the *Maharishi Effect*—the growth of coherence in the collective consciousness of states, nations, and the world, which can be found in the final section of Part III: Sociology, B: Productivity and Quality of Life, principally in Vols. 4–5, and in the recent research section.

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PART I: PHYSIOLOGY

The studies in the first two sections document changes during the practice of the Transcendental Meditation technique unless otherwise stated.

A: Metabolic Changes

   Indications of Deep Rest along with Wakeful, Ordered State of Brain Functioning: Decreased Metabolic Rate (Decreased Oxygen Consumption and Unchanged Respiratory Quotient); Decreased Minute Ventilation; Decreased Heart Rate; Increased Basal Skin Resistance; Increased Regularity and Intensity of EEG Alpha Activity.

2. WALLACE, R. K. The physiological effects of Transcendental Meditation: A proposed fourth major state of consciousness. Doctoral thesis, Department of Physiology, School of Medicine, University of California at Los Angeles, Los Angeles, California, U.S.A., 1970.
   Indications of Deep Rest along with Wakeful, Ordered State of Brain Functioning: Decreased Metabolic Rate (Decreased Oxygen Consumption and Decreased Carbon Dioxide Elimination); Normal Arterial Oxygen and Carbon Dioxide Partial Pressures; Decreased Respiration Rate; Decreased Heart Rate; Increased Basal Skin Resistance; Increased Regularity and Intensity of EEG Alpha Activity in Frontal and Central Regions. Reduction in Biochemical Index of Stress: Decreased Arterial Lactate Levels. Self-Reported Improvements in Physical and Mental Health, and Resistance to Disease.

   Indications of Deep Rest along with Wakeful, Ordered State of Brain Functioning: Decreased Metabolic Rate (Decreased Oxygen Consumption and Decreased Carbon Dioxide Elimination); Normal Arterial Oxygen and Carbon Dioxide Partial Pressures; Decreased Respiration Rate; Decreased Minute Ventilation; Decreased Heart Rate; Increased Basal Skin Resistance; Increased Regularity and Intensity of EEG Alpha Activity in Frontal and Central Regions; Episodes of Rhythmical EEG Theta Activity in Frontal Region. Reduction in Biochemical Index of Stress: Decreased Arterial Lactate Levels.

Indications of Deep Rest along with Wakeful, Ordered State of Brain Functioning: Decreased Metabolic Rate (Decreased Oxygen Consumption and Decreased Carbon Dioxide Elimination); Normal Arterial Oxygen and Carbon Dioxide Partial Pressures; Decreased Respiration Rate; Decreased Minute Ventilation; Decreased Heart Rate; Increased Skin Resistance; Increased Regularity and Intensity of EEG Alpha Activity in Frontal and Central Regions. Reduction in Biochemical Index of Stress: Decreased Arterial Lactate Levels.

   Indication of Deep Rest: Decreased Respiration Rate.

   Increased Ease of Breathing: Increased Airway Conductance. Indications of Deep Rest: Decreased Metabolic Rate (Decreased Oxygen Consumption and Decreased Carbon Dioxide Elimination); Decreased Heart Rate. Maintenance of a Relaxed Style of Physiological Functioning Outside of Meditation: Lower Basal Metabolic Rate after Meditation.

7. FARROW, J. T. Physiological changes associated with transcendental consciousness, the state of least excitation of consciousness. Psychophysiology Laboratory, Centre for the Study of Higher States of Consciousness, Maharishi European Research University, Switzerland, 1975.
   Experience of Transcendental Consciousness Associated with: High EEG Coherence in the Theta, Alpha, and Beta Bands; Episodes of Spontaneous Breath Suspension (Not Followed by Hyperventilation); Marked Reductions in Respiration Rate, Minute Ventilation, Metabolic Rate (Oxygen Consumption and Carbon Dioxide Elimination), and Heart Rate; Increased Basal Skin Resistance; Cessation of Spontaneous Skin Resistance Response.

8. HEBERT, J. R. Periodic suspension of respiration during the Transcendental Meditation technique. Psychophysiology Laboratory, Centre for the Study of Higher States of Consciousness, Maharishi European Research University, Switzerland, 1976.
   Maximum State of Deep Rest: Episodes of Spontaneous Breath Suspension (Not Followed by Hyperventilation).

   Indications of Deep Rest: Decreased Metabolic Rate (Decreased Oxygen Consumption and Unchanged Respiratory Quotient); Decreased Tidal Volume; Decreased Respiration Rate.

10. BAKKER, R. Decreased respiratory rate during the Transcendental Meditation

Indication of Deep Rest: Decreased Respiration Rate.


Small Increase in Forearm Blood Flow.


Reduction in Biochemical Index of Stress: Decreased Plasma Cortisol Levels. Small Increase in Plasma Prolactin Immediately following Transcendental Meditation.


Increased Plasma Phenylalanine Levels.

**B: Electrophysiological and Electroencephalographic Changes**


EEG Indications of Restful Alertness: Coexistence of Theta and Delta with Alpha and Beta EEG Activity. Increased Orderliness and Integration of Brain Functioning: Hypersynchrony and Rhythmicity; Synchronization of Anterior and Posterior Channels; Periods of Uniformity of Frequency and Amplitude from All Leads.


Increased Orderliness and Integration of Brain Functioning: High Amplitude EEG Alpha Activity Extending to Anterior Channels; Bursts of High Amplitude Theta Activity in All Channels; Rhythmic High Amplitude Beta Activity in All Channels; Synchronization of Anterior and Posterior Channels. Electromyographic Evidence of Deep Muscular Relaxation.


Increased Orderliness and Integration of Brain Functioning: High Levels of Interhemispheric EEG Alpha Correlation; Greater Power Balance between Right and Left Hemispheres.

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EEG Indications of Restful Alertness: Less Activation (Decreased Proportion of Beta to Alpha); Greater Wakefulness (Increased Proportion of Alpha to Delta). Increased Orderliness and Integration of Brain Functioning: Greater Interhemispheric and Intrahemispheric EEG Synchrony.

18. KRAS, D. J. The Transcendental Meditation technique and EEG alpha activity. Department of Psychology, Stirling University, Stirling, Scotland, 1974.

EEG Indications of Restful Alertness: Increased Alpha Activity in All Areas of the Brain. Maintenance of a More Relaxed Style of Physiological Functioning Outside of Meditation: Persistence of Greater Alpha Activity following Meditation.


EEG Indications of Inner Wakefulness during Sleep.

20. LEVINE, P. H.; HEBERT, J. R.; HAYNES, C. T.; and STROBEL, U. EEG coherence during the Transcendental Meditation technique. Psychophysiology Laboratory, Centre for the Study of Higher States of Consciousness, Maharishi European Research University, Switzerland, 1976.

Increased Orderliness and Integration of Brain Functioning: Increased EEG Coherence Especially in Alpha and Theta Bands.


Correlations between High EEG Coherence, High Levels of Creativity, Enhanced Neurological Efficiency (Faster H-Reflex Recovery), and Clarity of Experiences of Transcendental Consciousness.


Indication of Deep Relaxation: Marked Increase in Basal Skin Resistance.


Indication of Deep Relaxation: Marked Increase in Basal Skin Resistance.

24. WEST, M. A. Changes in skin resistance in subjects resting, reading, listening to
music, or practicing the Transcendental Meditation technique. University College of Swansea, University of Wales, Swansea, Wales, 1973.
Indication of Deep Relaxation: Marked Increase in Basal Skin Resistance.

C: Physiological Efficiency and Stability

Improve Resistance to Stress and Greater Autonomic Stability: Faster Habituation of Skin Resistance Response to Stressful Stimuli; Fewer Multiple Responses; Fewer Spontaneous Skin Resistance Responses.

Improved Resistance to Stress and Greater Autonomic Stability: Faster Habituation of Skin Resistance Response to Stressful Stimuli; Fewer Spontaneous Skin Resistance Responses.

Improved Resistance to Stress and Greater Autonomic Stability: Faster Habituation of Skin Resistance Response to Stressful Stimuli; Fewer Spontaneous Skin Resistance Responses.

Improved Resistance to Stress and Greater Autonomic Stability: Faster Habituation of Skin Resistance Response to Stressful Stimuli.

EEG Indications of Greater Alertness (in Response to Photic Stimulation).

Increased Basal Skin Resistance during Transcendental Meditation. Maintenance of a Relaxed Style of Physiological Functioning outside the Practice of Transcendental Meditation: Lower Heart Rate; Lower Respiration Rate.

Enhanced Temperature Homeostasis: Faster Recovery of Normal Skin Temperature following Exertion.

**D: Health**

   
   Improvements in Hypertensive Subjects: Decreased Blood Pressure.

   
   Improvements in Hypertensive Subjects: Decreased Blood Pressure; Decreased Anxiety.

34. SIMON, D. B.; OPARIL, S.; and KIMBALL, C. P. The Transcendental Meditation program and essential hypertension. Hypertension Clinic and Department of Psychiatry, Pritzker School of Medicine, University of Chicago, Chicago, Illinois, U.S.A., 1974.
   
   Improvements in Hypertensive Subjects: Decreased Blood Pressure. Improvements in Patients with Angina Pectoris: Improved Exercise Tolerance; Increased Maximum Workload; Delayed Appearance of Electrocardiographic Abnormalities during Exercise (Delayed Onset of ST Segment Depression); Decreased Double Product; Clinical Observations of Decreased Anxiety; Decreased Need for Tranquillizers and Anti-Anginal Drugs; Improved Sleeping Patterns; Improved Personal Relationships.

   
   Improvements in Patients with Angina Pectoris; Improved Exercise Tolerance; Increased Maximum Workload; Delayed Appearance of Electrocardiographic Abnormalities during Exercise (Delayed Onset of ST Segment Depression); Decreased Double Product; Clinical Observations of Decreased Anxiety; Decreased Need for Tranquillizers and Anti-Anginal Drugs; Improved Sleeping Patterns; Improved Personal Relationships.

   
   Improvements in Patients with Bronchial Asthma: Decreased Severity of Symptoms Reported by Patients and Physicians; Reduced Airway Resistance.

Improvements in Patients with Bronchial Asthma: Decreased Severity of Symptoms; Reduced Airway Resistance.


Improvements in Patients with Bronchial Asthma: Decreased Severity of Symptoms Reported by Patients and Physicians; Reduced Airway Resistance.


Improved Periodontal Health: Decreased Gingival Inflammation.


Faster Recovery from Sleep Deprivation.

41. MISKIMAN, D. E. The treatment of insomnia by the Transcendental Meditation program. Graduate Department of Psychology, University of Alberta, Edmonton, Alberta, Canada, 1972.

Relief from Insomnia: Decreased Time Taken to Fall Asleep.


Relief from Insomnia: Decreased Time Taken to Fall Asleep (Benefits Sustained over Time).


Decreased Stuttering.

44. WELDON, J. T., and ARON, A. The Transcendental Meditation program and normalization of weight. Department of Psychology, Maharishi International University, Fairfield, Iowa, U.S.A., 1974.

Normalization of Weight.

**E: Motor and Perceptual Ability, and Athletic Performance**

45. SHAW, R., and KOLB, D. Reaction time following the Transcendental Meditation technique. Graduate Department of Psychology, University of Texas at Austin, Austin, Texas, U.S.A., 1971.


Increased Perceptual Acuity: Improved Auditory Temporal Discrimination.

Increased Field Independence (Growth of a Stable Internal Frame of Reference, Increased Perceptual Acuity).

Increased Field Independence (Growth of a Stable Internal Frame of Reference, Increased Perceptual Acuity).

Benefits for Athletes: Improved Physiological Functioning—Improved Cardiovascular Efficiency; Improved Respiratory Efficiency (Increased Vital Capacity); Reduction of Blood Pressure to More Ideal Levels; Increased Hemoglobin Concentration. Improved Athletic Performance and Neuromuscular Integration: Increased Running Speed; Improved Standing Broad Jump; Improved Agility; Faster Reactions and Improved Co-ordination. Increased Intelligence.
PART II: PSYCHOLOGY

A: Intelligence, Learning, and Academic Performance

54. TJOA, A. Some evidence that the Transcendental Meditation program increases intelligence and reduces neuroticism as measured by psychological tests. G.I.T.P., Amsterdam, The Netherlands, 1972.
   Benefits for High School Students: Decreased Neuroticism; Greater Intelligence
   Growth Rate: Increased Fluid Intelligence.

   Increased Fluid Intelligence; Decreased Neuroticism; Decreased Somatic Neurotic Instability.

   Benefits for University Students: Quicker Acquisition of Information (Better Learning Ability); Superior Recall.

57. MISKIMAN, D. E. Performance on a learning task by subjects who practice the Transcendental Meditation technique. Graduate Department of Psychology, University of Alberta, Edmonton, Alberta, Canada, 1972.
   Benefits for University Students: Superior Learning Ability.

   Benefits for University Students: Improved Spontaneous Organization of Memory; Improved Stabilization of Organized Memory; Improved Problem-Solving Ability.


   Benefits for High School Students: Improved Academic Performance; Reduced
State and Trait Anxiety.


Benefits for High School Students: Improved Intellectual Performance (Increased Problem Solving Ability); Increased Creativity; Increased Energy Level; Increased Innovation, Autonomy, and Independence; Increased Self-Esteem; Increased Tolerance; Increased Ability to Deal with Abstract and Complex Situations; Decreased Anxiety.

63. MACCALLUM, M. J. The Transcendental Meditation program and creativity. Graduate Department of Psychology, California State University at Long Beach, Long Beach, California, U.S.A., 1974.

Greater Creativity: Greater Fluency, Flexibility, and Originality of Creative Thought.

**B: Development of Personality**


Increased Self-Actualization: Increased Inner-Directedness (Independence, Self-Supportiveness); Increased Spontaneity; Enhanced Self-Regard.

65. FEHR, T.; NERSTHEIMER, U.; and TORBER, S. Study of personality changes resulting from the Transcendental Meditation program: Freiburger Personality Inventory. Department of Social Affairs, MIU/Forschungsring Schopferische Intelligenz, Dormagen, W. Germany, 1972.

Less Nervousness (Less Psychosomatic Disturbance); Less Aggressiveness (Greater Self-Control, Greater Emotional Maturity); Less Depression (Greater Contentment, Greater Self-Confidence); Less Irritability (Greater Calm in Frustrating Situations, Greater Tolerance); Greater Sociability (Greater Friendliness, Greater Liveliness); Greater Placidity (Greater Self-Assuredness, More Good Humor, Less Tendency to Procrastinate); Less Tendency to Dominate (Greater Respectfulness); Less Inhibition (Greater Naturalness, Greater Spontaneity, Greater Self-Sufficiency); Less Neuroticism (Greater Emotional Stability, Less Tension); Greater Self-Reliance (Greater Effectiveness, More Balanced Mood, Greater Vigor).


Interest in Learning Transcendental Meditation Found to Be Uncorrelated with Personality Factors.

67. BERG, W. P. VAN DEN, and MULDER, B. Psychological research on the effects of the Transcendental Meditation technique on a number of personality variables.

Less Neuroticism; Greater Self-Esteem; Better Self-Image; Greater Ego Strength; Greater Trust; Greater Satisfaction; Greater Self-Actualization; Less Sensitivity to Criticism; Less Depression; Decreased Sense of Physical Inadequacy.


Decreased Anxiety.


Increased Self-Actualization: Increases in—Time Competence (Ability to Live More Fully in the Present, Ability to Connect Past and Present Meaningfully); Inner-Directedness (Independence, Self-Supportiveness); Self-Actualizing Value (Holding of Values of Self-Actualizing People); Feeling Reactivity (Sensitivity to One’s Own Needs and Feelings); Spontaneity; Self-Regard; Capacity for Intimate Contact (Capacity for Warm Interpersonal Relationships). Greater Inner Locus of Control; Less Anxiety.


Increased Self-Actualization: Increases in—Time Competence (Ability to Live More Fully in the Present, Ability to Connect Past, Present, and Future Meaningfully); Inner-Directedness (Independence, Self-Supportiveness); Self-Actualizing Value (Holding of Values of Self-Actualizing People); Feeling Reactivity (Sensitivity to One’s Own Needs and Feelings); Spontaneity; Self-Acceptance; Capacity for Intimate Contact (Capacity for Warm Interpersonal Relationships).


Greater Interest in Academic Activities; Greater Intellectual Orientation; Greater Aestheticism; Greater Respect for Traditional Religious Values; Greater Adaptability of Mental Orientation; Greater Autonomy; Greater Social Extroversion; Less Impulsiveness; Greater Personal Integration (Decreased Social Alienation and Emotional Disturbance); Lower Anxiety Level; Greater Altruism.

Increased Self-Actualization: Increased Inner-Directedness/Time Competence. Increased Feeling Reactivity (Increased Sensitivity to One’s Own Needs and Feelings). Reduced Trait Anxiety.


Decreased Aggression (Increases in: Tactfulness, Calmness, Easygoingness, Forgiveness, and Consideration; Decreases in: Argumentativeness, Irritability, and Threatening Behavior); Improved Leadership Ability; Growth of a More Brave, Adventurous, Action-Oriented Nature; Increased Affiliation (Increases in: Enjoyment of Friends, Maintenance of Associations with Others, Warmth, Neighborliness, and Co-operativeness); Increased Nurturance (Increases in: Need to Give Sympathy and Assistance to Others, Protective, and Consideration for Others); Decreased Use of Drugs; Decreased Use of Alcohol.

74. SHAPIRO, J. The relationship of the Transcendental Meditation program to self-actualization and negative personality characteristics. Doctoral thesis (summary), Department of Psychology, University of Southern California, Los Angeles, California, U.S.A., 1974.

Increased Self-Actualization; Decreased Depression; Decreased Neuroticism; Decreased Aggression; Decreased Anxiety.


Decreased General Anxiety.


Greater Self-Actualization in Students at Maharishi International University than in Other College Students: Greater—Time Competence (Ability to Live More Fully in the Present, Ability to Connect Past and Present Meaningfully); Inner-Directedness (Independence, Self-Supportiveness); Self-Actualizing Value (Holding of Values of Self-Actualizing People); Spontaneity; Self-Regard; Nature of Man is Constructive (Ability to See Man as Essentially Good); Synergy (Ability to See Opposites of Life as Meaningfully Related); Capacity for Intimate Contact (Capacity for Warm Interpersonal Relationships).

77. FEHR, T. A longitudinal study of the effect of the Transcendental Meditation program on changes in personality. Department of Social Affairs, MIU/Forschungsring Schöpferische Intelligenz, Dormagen, W. Germany, 1974.

Decreased Nervousness (Decreased Psychosomatic Disturbance); Decreased Aggressiveness (Increased Self-Control, Increased Emotional Maturity); Decreased Depression (Increased Contentment, Increased Self-Confidence); Decreased Irritability (Increased Calm in Frustrating Situations, Increased Tolerance); Increased Sociability (Increased Friendliness, Increased Liveliness); Increased Placidity (Increased Self-Assuredness, Increased Good Humor, Decreased Tendency to
Procrastinate); Decreased Tendency to Dominate (Increased Flexibility, Respectfulness, and Tolerance); Decreased Inhibition (Increases in: Naturalness, Spontaneity, Self-Sufficiency); Increased Extroversion (Increased Capacity for Warm Interpersonal Relationships); Decreased Neuroticism (Increased Emotional Stability, Decreased Tension); Increased Self-Reliance (Increased Effectiveness, More Balanced Mood, Increased Vigor).


Increased Self-Actualization; Decreased Anxiety; Decreased Depression; Decreased Neuroticism.

**PART III: SOCIOLOGY**

**A: Rehabilitation**


Decreased Drug Abuse.


Decreased Drug Abuse; Decreased Use of Alcohol; Decreased Use of Cigarettes; Decreased Drug Selling; Increased Tendency to Discourage the Use of Drugs by Others.


Increased Psychological Stability; Increased Adjustment (Increased Self-Acceptance, Satisfaction, and Ability to Handle One’s Situation); Decreased Anxiety; Decreased Tension; Decreased Psycho-Motor Retardation; Decreased Drug Abuse.


Decreased Drug Abuse.


Decreased Use of Alcohol.

84. LAZAR, Z.; FARWELL, L.; and FARROW, J. T. The effects of the Transcendental Meditation program on anxiety, drug abuse, cigarette smoking, and
alcohol consumption. Graduate School of Education, Boston University, Boston, Massachusetts, U.S.A.; Department of Social Relations, Harvard University, Cambridge, Massachusetts, U.S.A.; and Graduate Department of Biochemistry, Brandeis University, Waltham, Massachusetts, U.S.A., 1972.
Decreased Anxiety; Decreased Use of Cigarettes; Decreased Use of Alcohol; Decreased Drug Abuse.

Decreased Use of Alcohol; Decreased Drug Abuse.

86. SCHENKLUHN, H., and GEISLER, M. A longitudinal study of the influence of the Transcendental Meditation program on drug abuse. Drug Rehabilitation Center of Arbeiterwohlfahrt Kreisverband, Mülheim/Ruhr, W. Germany, 1974.
Decreased Drug Abuse.

Rehabilitation of Prisoners: Increased Physiological Stability and Psychological Adaptability—Fewer Spontaneous Skin Resistance Responses; Decreased Obsessive-Compulsive Behavior (Increased Behavioral Flexibility); Decreased Social Introversion (Increased Social Ease and Outgoingness).

Rehabilitation of Prisoners: Decreased Anxiety; Other Improvements in Mental Health.

Rehabilitation of Prisoners: Decreased Anxiety; Decreased Prison Disciplinary Rule Infractions; Fewer Parole Violations; Increased Participation in Recreational and Educational Activities; Decreased Drug Abuse.

Rehabilitation of Juvenile Offenders: Decreased Anxiety; Positive Change as Reported by Both Subjects and Parents; Decreased Drug Abuse; Decreased Court Problems; Increased Happiness; Improved Interpersonal Relationships; Increased Self-Actualization; Enhanced Self-Regard.

91. NIDICH, S. I. A study of the relationship of the Transcendental Meditation program to Kohlberg’s stages of moral reasoning. Doctoral thesis (abbr.), Department of

Greater Moral Maturity.


Decreased Anxiety; Decreased Neuroticism; Decreased Psychoticism.


Improvements in Mental Health: Decreased Anxiety; Decreased Hypochondria; Decreased Internal Conflicts and Confusion; Increased Clarity of Mind, Relaxation, Energy Level, and Sensitivity to Others.


Increased Self-Actualization: Increased Time Competence (Ability to Live More Fully in the Present, Ability to Connect Past, Present, and Future Meaningfully); Increased Inner-Directedness (Independence, Self-Supportiveness); Increased Existentiality (Flexibility in Application of Self-Actualizing Values); Enhanced Self-Regard; Increased Self-Acceptance.

95. BLOOMFIELD, H. H. Some observations on the uses of the Transcendental Meditation program in psychiatry. Institute of Psychophysiological Medicine, San Diego, California, U.S.A., 1975.

Case Histories Illustrating Benefits in the Treatment of Psychiatric Patients with a Variety of Disorders, Including Anxiety Neurosis, Obsessive-Compulsive Neurosis, Depression, Drug and Alcohol Abuse, Psychosomatic Disorders, and Chronic Insomnia.

**B: Productivity and Quality of Life**


Increased Productivity: Improved Work Performance; Increased Work Satisfaction; Improved Relations with Co-Workers; Improved Relations with Supervisors; Decreased Turnover Propensity; Decreased Self-Report Climb Orientation/Increased Climb Orientation as Reported by Co-Workers and Supervisors.

97. FRIEND, K. E. Effects of the Transcendental Meditation program on work attitudes

Improved Work Performance; Increased Work Satisfaction; Improved Relations with Co-Workers; Improved Relations with Supervisors.

98. BORLAND, C., and LANDRITH III, G. Improved quality of city life through the Transcendental Meditation program: Decreased crime rate. Department of Educational Psychology, Maharishi European Research University, Switzerland, and Department of Psychology, Maharishi International University, Fairfield, Iowa, U.S.A., 1976.

Improved Quality of City Life: Decreased Crime Rate (U.S.A., 1973).

PART IV: THEORETICAL PAPERS

99. DOMASH, L. H. The Transcendental Meditation technique and quantum physics: Is pure consciousness a macroscopic quantum state in the brain? Department of Physics, Maharishi European Research University, Switzerland, 1975.

In this contribution, the data of many of the preceding papers are organized into a theory of the Transcendental Meditation technique. Intended mainly for an audience of physicists, this paper should be of interest to psychologists, physiologists, and philosophers as well. The author interprets the pure consciousness state induced by the Transcendental Meditation technique in terms of quantum physics as a zero-entropy vacuum state, and puts forward the hypothesis that a form of superconductivity in the brain may underlie its physiology.

100. ORME-JOHNSON, D. The dawn of the Age of Enlightenment: Experimental evidence that the Transcendental Meditation technique produces a fourth and a fifth state of consciousness in the individual and a profound influence of orderliness in society. Department of Psychology, Maharishi European Research University, Switzerland, 1976.

A review of scientific data shows that a fourth state of consciousness is reached through the Transcendental Meditation program. It is seen that repeated experience of this state develops a fifth state of consciousness, cosmic consciousness or enlightenment, in which behavior is spontaneously “in accord with all the laws of nature.”


This contribution outlines the broad historical implications of scientific research on the Transcendental Meditation program for developing enlightened individuals, an enlightened society, cultural integrity, and world peace.

PART V: THE TM-SIDHI PROGRAM

102. ORME-JOHNSON, D. W.; CLEMENTS, G.; HAYNES, C. T.; and BADAWI, K.
Higher states of consciousness: EEG coherence, creativity, and experiences of the sidhis. Centre for the Study of Higher States of Consciousness, Maharishi European Research University, Switzerland, 1977.

Global EEG Coherence during Experience of the TM-Sidhis; Correlations between High EEG Coherence, Higher States of Consciousness, Experience of the TM-Sidhis, and Creativity.

103. ORME-JOHNSON, D. W., and GRANIERI, B. The effects of the Age of Enlightenment Governor Training Courses on field independence, creativity, intelligence, and behavioral flexibility. Centre for the Study of Higher States of Consciousness, Maharishi European Research University, Switzerland, 1977.

Increased Field Independence (Growth of a More Stable Internal Frame of Reference, Increased Perceptual Acuity); Increased Creativity—Increased Figural Fluency and Originality; Increased Intelligence; Increased Behavioral Flexibility; Increased Psychomotor Speed and Motor-Cognitive Flexibility (Findings Indicate a Reversal of the Aging Process).

104. CLEMENTS, G., and MILSTEIN, S. L. Auditory thresholds in advanced participants in the Transcendental Meditation program. Department of Experimental Psychology, Maharishi European Research University, Switzerland, and Institut National de la Recherche Scientifique, Centre de Recherche en Sciences de la Santé, Universite du Québec, Montreal-Gamelin, Québec, Canada, 1977.

Greatly Improved Auditory Thresholds.

VOLUME 2


PART I: PHYSIOLOGY

The studies in the first two sections document changes during the practice of the Transcendental Meditation technique unless otherwise stated.

A: Metabolic, Biochemical, and Cardiovascular Changes


Changes in Regional Blood Flow Indicative of Increased Blood Flow to the Brain.

106. JEVNING, R.; WILSON, A. F.; SMITH, W. R.; and MORTON, M. Redistribution of blood flow in Transcendental Meditation. Department of Medicine, University of California at Irvine, Orange, California, U.S.A. Paper
Changes in Regional Blood Flow Indicative of Increased Blood Flow to the Brain.


Increased Concentration of Salivary Electrolytes and Protein.


Indications of Deep Rest in Athletes: Decreased Metabolic Rate (Decreased Oxygen Consumption and Decreased Carbon Dioxide Elimination); Decreased Respiration Rate; Decreased Heart Rate; Decreased Minute Ventilation.


Reduction in Biochemical Index of Stress: Decreased Plasma Cortisol Levels. Biochemical Indication of Reduced Stress during Activity: Decreased Urinary Free Cortisol Levels.


Changes in Neurotransmitter Balance: Increased Levels of Serotonin Metabolite (Increased 5-HIAA Levels); Decreased Levels of Adrenaline and Noradrenaline Metabolite (Decreased VMA Levels) and Higher Levels of 5-HIAA outside the Practice of Transcendental Meditation.

111. JEVNING, R., and WILSON, A. F. Acute decline in adrenocortical activity during Transcendental Meditation. Department of Medicine, University of California at Irvine, Orange, California, U.S.A., 1977.

Reduction in Biochemical Index of Stress: Decreased Plasma Cortisol Levels.


Fundamental Change in Cellular Metabolism: Reduced Glucose Metabolism in Red Blood Cells.


Increased Plasma Phenylalanine Levels.

**B: Electrophysiological and Electroencephalographic Changes**

114. KOBAL, G.; WANDHÖFER, R. A.; and PLATTIG, K.-H. EEG power spectra and auditory evoked potentials in Transcendental Meditation (TM). *Pflügers Archiv,*

Improved Efficiency of Information Transfer in the Brain: Shorter Latencies of Auditory Evoked Potentials (Both during and outside the Practice of Transcendental Meditation). Increased EEG Alpha Power.


EEG Indications of Increased Orderliness of Brain Functioning: High Amplitude Alpha and Theta Activity in All Cortical Regions.


Improved Efficiency of Information Transfer in the Brain: Shorter Latencies of Auditory Evoked Potentials (Both during and outside the Practice of Transcendental Meditation).

117. DASH, P., and ALEXANDER, C. N. Electrophysiological characteristics during the Transcendental Meditation program and napping: A pilot study. Divisions of Natural and Social Sciences, University of California at Santa Cruz, Santa Cruz, California, U.S.A., 1976.

EEG Differentiation between Transcendental Meditation and Napping.


EEG Indications of Lessened Sleep Requirement.

119. BANQUET, J. P.; HAYNES, C.; HEBERT, R.; and REBER, B. Sleep and dream in altered states of consciousness. LENA, La Salpêtrière, Paris, France, and EEG Laboratory, Maharishi European Research University, Seelisberg, Switzerland, 1976.

EEG Indications of Lessened Sleep Requirement.


Greater Adaptability of Brain Functioning outside the Practice of Transcendental Meditation: Greater Lateral EEG Asymmetry during Right and Left Hemisphere Tasks.


EEG Indications of Increased Inner Satisfaction: Synchronous Theta Bursts.

C: Physiological Efficiency and Stability

122. SULTAN, S. E. A study of the ability of individuals trained in Transcendental
Meditation to achieve and maintain levels of physiological relaxation. Master’s thesis (abbr.), School of Human Behavior, United States International University, San Diego, California, U.S.A., 1975.

Electromyographic Evidence of Deep Muscular Relaxation; Greater Ability to Maintain Relaxation during Activity.


Improved Resistance to Stress: Greater Autonomic Stability—Greater Stability of Skin Resistance in Response to Stressful Stimuli. Improved Auditory Discrimination and Greater Ability to Process Information at Speed (Superior Dichotic Listening).

D: Health


Reduction of Blood Pressure to More Ideal Levels in Both Hypertensive and Normotensive Subjects.


Improved Mental and Physical Health in Patients on a Kidney Transplant/Dialysis Program: Decreased Blood Pressure; Decreased Anxiety; Increased Independence; Enhanced Self-Image; Improved Sense of Well-Being.


Improvements in Sleeping and Dreaming Patterns: Improved Quality of Sleep; Decreased Time to Fall Asleep; More Rested on Awakening; Decreased Awakenings per Night; Decreased Time to Awaken Fully; Decreased Drowsiness; Decreased Lethargy; Decreased Daytime Napping; Decreased Number of Dreams Remembered; Decrease in Complexity of Dreams; Decrease in Unpleasant Emotional Content of Dreams; Decrease in Recurring Dreams; Decreased Need for Sleep Medications. Decreased Use of Alcohol. Improved Reported State of Mental Health. Reduced Need for Medical Attention.


Epidemiological Evidence for Prevention of Psychiatric Illness.
E: Motor and Perceptual Ability, and Athletic Performance

   Increased Perceptual Acuity: Improved Auditory Frequency and Amplitude Discrimination.


   Benefits for Athletes: A Unique State of Deep Rest during Transcendental Meditation—Decreased Metabolic Rate (Decreased Oxygen Consumption); Increased Basal Skin Resistance; Fewer Spontaneous Skin Resistance Responses. Improved Physiological Functioning outside the Practice of Transcendental Meditation—Improved Cardiovascular Efficiency; Improved Respiratory Efficiency (Increased Vital Capacity). Improved Athletic Performance and Neuromuscular Integration—Improved Running Speed; Improved Standing Broad Jump; Improved Agility; Faster Reactions.

   Improved Perceptual Ability: Lower Incidence of Perceptual Illusions.

PART II: PSYCHOLOGY

A: Intelligence, Learning, and Academic Performance

   Benefits for High School Students: Improved Concentration; Improved Reading Comprehension; Improved Memory.

Benefits for School Children with Learning Problems: Decreased Anxiety; Decreased Examination Anxiety; Decreased School Dislike.

Improved Memory and Organization of Memory—Effect More Pronounced in Long-Term Meditators.

More Efficient Functioning of the Right Cerebral Hemisphere: Better Spatial Localization.

Benefits for College Students: Improved Short-Term Memory, Ability to Focus Attention, and Spontaneous Organization of Memory.

Decreased Neuroticism in Secondary School Students.

Benefits for Students Resulting from Maharishi’s Integrated System of Education at Maharishi International University: Greater Interest in Academic Activities; Greater Commitment to Higher Education; Greater Intellectual and Scientific Orientation; Greater Aesthetic Orientation; Greater Respect for Traditional Religious Values; Greater Optimism about the Future of Society; Greater Altruism (Greater Commitment to Helping Others and Improving Society); Greater Sense of Social Responsibility; Greater Tolerance of Authority; Greater Trust; Greater Sociability; Greater Psychological Stability; Greater Commitment to Personal Growth; Less Anxiety; Less Impulsiveness.

Increased Self-Actualization in Economically Deprived Adolescents with Learning Problems: Increased Inner-Directedness (Independence, Self-Supportiveness); Increased Self-Regard. Decreased Dropout Rate from School.

Superior Synthetic and Holistic Thinking: Enhanced Tonal Memory.

B: Development of Personality

   Improved Mental Health: Increased Capacity for ‘Adaptive Regression’ (Conscious Experience of the Inner Self and Ability to Bring the Inner Self to Healthy Expression).

   Decreased Number of Situations in Life Felt to Be a Problem; Decreased Number of Serious Problems Experienced; Decreased Hostility; Enhanced Self-Concept.

143. HAHN, H. R., and WHALEN, T. E. The effects of the Transcendental Meditation program on levels of hostility, anxiety, and depression. Master’s thesis (abbr.), Department of Educational Psychology, California State University at Hayward, Hayward, California, U.S.A., 1974.
   Decreased Hostility; Decreased Anxiety; Decreased Depression.

   Benefits for University Students: Increased Self-Actualization; Enhanced Self-Concept.

   Decreased Anxiety.

   Better Self-Concept and Degree of Adjustment; Improved Psychological Health.

147. WEISS, C. The immediate effect of the Transcendental Meditation technique and theoretical reflections upon the psychology and physiology of subjective well-being. Diplomarbeit (abbr.), Institute of Psychology, University of the Saarland, Saarbrücken, W. Germany, 1975.
   Increased Elevated Mood; Increased Mental Clarity and Wakefulness; Increased Readiness for Activity; Decreased Vulnerability; Decreased Nervousness; Decreased Fatigue; Decreased Drowsiness; Decreased Lethargy; Decreased Depressed Mood; Decreased Introversion; Decreased Aggressive Irritation.

148. GUPTA, N. C. Effects of Transcendental Meditation on anxiety and self-concept. Department of Educational Psychology, Ball State University, Muncie,
Enhanced Self-Concept; Decreased Anxiety.

Greater Empathy.

Increased Ego Strength, Emotional Stability and Maturity, and Decreased Overreactionary Behavior; Increased Emotional Harmony and Absence of Regressive Behavior; Increased Emotional Strength and Lessening of Unwelcome Thoughts or Compulsive Habits; Decreased Depression, Showing a Calmer, More Confident Attitude; Increases in—Intelligence; Self-Sufficiency and Resourcefulness; Contentment; Enthusiasm for Work; Trust; Tolerant and Participating Attitude; Creativity; Decreases in—Anxiety and Tension; Use of Alcohol; Use of Cigarettes; Need for Tranquilizers and Other Prescribed Drugs.

151. RUSSIE, R. E. The influence of Transcendental Meditation on positive mental health and self-actualization; and the role of expectation, rigidity, and self-control in the achievement of these benefits. Doctoral thesis (abbr.), California School of Professional Psychology, Los Angeles, California, U.S.A., 1975.
Increased Self-Actualization: Increases in—Time Competence (Ability to Live More Fully in the Present, Ability to Connect Past, Present, and Future Meaningfully); Inner-Directedness (Independence, Self-Supportiveness); Self-Actualizing Value (Holding of Values of Self-Actualizing People); Feeling Reactivity (Sensitivity to One’s Own Needs and Feelings); Spontaneity; Self-Regard; Self-Acceptance; Capacity for Intimate Contact (Capacity for Warm Interpersonal Relationships).

Greater Open-Mindedness: Greater Flexibility of Constructions of Reality.

Increased Self-Actualization: Increases in—Time Competence (Ability to Live More Fully in the Present, Ability to Connect Past, Present, and Future Meaningfully); Inner-Directedness (Independence, Self-Supportiveness); Self-Actualizing Value (Holding of Values of Self-Actualizing People); Feeling Reactivity (Sensitivity to One’s Own Needs and Feelings); Spontaneity; Self-Regard; Nature of Man is Constructive (Ability to See Man as Essentially Good); Capacity for Intimate Contact (Capacity for Warm Interpersonal Relationships). Increased Ego Strength and Emotional Maturity, Decreased Overreactionary Behavior; Increased Boldness and Self-Sufficiency, Decreased Inhibition;
Increased Self-Reliance, Practicality, Realism, and Logical Behavior; Increased Tolerant and Conciliatory Attitudes; Decreased Instability, Insomnia, and Hypochondriacal and Neurasthenic Symptoms; Increased Self-Control, Persistence, Foresight, Consideration of Others, and Regard for Etiquette; Increased Relaxed, Unfrustrated, Guilt-Free Behavior; Increased Outgoingness and Tendency to Participate; Decreased Anxiety; Increased Self-Sufficiency. Decreased Need for Sleep Medication and Pain Relievers; Decreased Use of Cigarettes; Decreased Use of Alcohol; Decreased Drug Abuse.


Decreased Anxiety in University Students.


Increased Self-Actualization: Increases in—Time Competence (Ability to Live More Fully in the Present, Ability to Connect Past and Present Meaningfully); Inner-Directedness (Independence, Self-Supportiveness).


Enhanced Self-Concept: Less Likely to Qualify Self-Description; Fewer Personality Defects; Greater Self-Esteem; Better Opinion of Oneself; Greater Self-Satisfaction; Greater Sense of Personal Worth; Greater Satisfaction with One’s Moral Worth and Relationship to God and Religion.

PART III: SOCIOLOGY

A: Rehabilitation


Benefits for Psychiatric Patients with Schizophrenia, Neurosis, Personality Disorders, and Alcohol and Drug Problems: Decreased Anxiety and Tension; Decreased Overactive or Impulsive Behavior; Improved Sleep Patterns (Decreased Awakenings per Night, Improved Quality of Sleep).


Rehabilitation of Imprisoned Drug Offenders: Enhanced Self-Esteem; Indications of Increased Emotional Stability and Maturity—Decreased Depression; Decreased Neuroticism; Decreased Guilt; Decreased Psychasthenia; Decreased Hypomania;
Decreased Schizophrenia; Increased Social Responsibility. Indications of Decreased Aggression—Decreased Hostility; Decreased Assault; Decreased Irritability; Decreased Suspicion; Decreased Resentment; Decreased Psychopathic Deviation.


160. FERGUSON, R. E. The Transcendental Meditation program at Massachusetts Correctional Institution Walpole: An evaluation report. Institute for Social Rehabilitation, Pacific Palisades, Los Angeles, California, U.S.A., 1977. Rehabilitation of Prisoners: Decreased Anxiety; Decreased Hostility; Decreased Prison Disciplinary Rule Infractions; Improved Sleep Patterns (Decreased Time to Fall Asleep, Decreased Awakenings per Night, Improved Quality of Sleep).

161. FERGUSON, R. E. A self-report evaluation of the effects of the Transcendental Meditation program at Massachusetts Correctional Institution Walpole—a follow-up. Institute for Social Rehabilitation, Pacific Palisades, Los Angeles, California, U.S.A., 1978. Rehabilitation of Prisoners: Increased Work Efficiency; Increased Ability to Handle Stress and Tension; Increased Ability to Deal with Others; Decreased Use of Alcohol and Prescribed and Non-Prescribed Drugs; Decreased Use of Cigarettes; Decreased Drug Abuse.


B: Productivity and Quality of Life

164. JONSSON, C. Organizational development through the Transcendental Meditation program: A study of relationships between the Transcendental Meditation program and certain efficiency criteria. Unpublished master’s thesis (abbr.), Department of Business Administration, Stockholm University, Stockholm, Sweden, 1975. Fulfillment of Goals of Organizational Development: Ability to Accomplish More
with Less Effort; Greater Alertness, Attentiveness, and Initiative; Greater Self-Confidence; Greater Decision Making Ability; Greater Ability to Assign Priorities; Greater Ease in Making Contacts with Other People; Greater Ability to Cooperate with Others and Greater Respect for the Views of Others; Greater Tolerance; Less Easily Irritated; Less Often Angry; Less Tendency to Worry about Other People’s Opinions; Less Often Tired.


Greater Marital Satisfaction: Greater Adjustment; Greater Happiness and Harmony; Greater Intimacy; Greater Acceptance of One’s Spouse; Greater Admirations of One’s Spouse; Greater Agreement on Conduct and Recreation.


PART IV: REVIEW PAPERS

Papers 167 to 189 review the application of the Transcendental Meditation and TM-Sidhi program in the areas of health, education, development of personality, rehabilitation, and quality of life.

A: Health


The physiological, psychological, and sociological benefits resulting from the practice of the Transcendental Meditation technique are reviewed. The value of the technique both in clinical practice and for society as a whole is emphasized.


The author discusses results of research on the Transcendental Meditation program and gives examples from his own experience of the benefits of Transcendental Meditation for the patient and the doctor.


The benefits of Transcendental Meditation for physiological functioning are reviewed and their value in clinical medicine is emphasized.

170. ORME-JOHNSON, D. W. EEG coherence during transcendental consciousness.
Very high EEG coherence, indicating increased orderliness of brain functioning, was found to be characteristic of the experience of transcendental consciousness during Transcendental Meditation. High correlations were found between: 1) coherence, 2) creativity, 3) clarity of experience of transcendental consciousness, 4) H-reflex recovery, and 5) suspension of respiration.


The paper presents a concise review of research on higher states of consciousness developed through the Transcendental Meditation and TM-Sidhi program and discusses the profound benefits of this program for the development of perfect health for both the individual and society.


The benefits of Transcendental Meditation for physiological functioning and their importance for health are reviewed.


The paper reviews the beneficial effects of the Transcendental Meditation program in the light of their importance for the prevention and elimination of stress and expansion of individual consciousness.


Research findings on the Transcendental Meditation program are discussed with respect to its benefits in the fields of health and social welfare.


The benefits of the Transcendental Meditation program in medical practice are described with particular reference to the alleviation of stress-related illness and psychosomatic complaints.

B: Education


The Science of Creative Intelligence and its practical aspect the Transcendental Meditation program are discussed in the light of their implications for resolving
the problems in education.


A U.S. public school superintendent outlines his successful experience of introducing Transcendental Meditation into the adult education program of his area and at a senior high school. Improved grades, improved relationships with family, teachers, and peers, and disappearance of drug abuse are reported.


The author presents the Science of Creative Intelligence as a fundamental interdisciplinary approach to education and outlines its great practical value in improving the quality of life in the light of scientific research on the Transcendental Meditation program.


The paper discusses the educational programs of Maharishi European Research University for unfolding the full potential of consciousness in every student, and developing a unified understanding of all fields of knowledge through the Science of Creative Intelligence and its practical aspect, the Transcendental Meditation and TM-Sidhi program. The authors propose that the implementation of this scientifically validated program in all areas of education will bring fulfillment to the goals of every system of education.

C: Personality


Transcendental Meditation is seen as an important method of increasing satisfaction and happiness.

D: Rehabilitation


Transcendental Meditation is discussed as a highly effective method to combat drug abuse.

The Transcendental Meditation technique is introduced as an effective means for criminal and drug rehabilitation.


The benefits of Transcendental Meditation for mind, body, social behavior, and world harmony are discussed. On this basis the application of the Transcendental Meditation program in prison and drug rehabilitation is proposed.


Research demonstrates that Transcendental Meditation is effective in the treatment and prevention of drug abuse.


The unique effectiveness of the Transcendental Meditation program in the rehabilitation of prisoners is discussed on the basis of research projects conducted in U.S. prisons. The author proposes the introduction of Transcendental Meditation in the probation and parole systems.


The authors propose that the development of enlightenment through the Transcendental Meditation program is the ideal means of rehabilitation. Scientific research on Transcendental Meditation is examined in the light of its application for the restoration of the full creative intelligence of the individual.


The Transcendental Meditation program is found to be effective in drug rehabilitation.


A review of research reveals that enlightenment—the state of fully developed human consciousness resulting from the regular practice of the Transcendental Meditation and TM-Sidhi program—fulfills the highest goals of psychiatry and
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medicine in bringing perfect health to both the individual and society—the basis for world peace.

E: Quality of Life


The integrated functioning of the nervous system, developed through Transcendental Meditation, is discussed as the basis of a holistic and all encompassing view of the environment and of life in accord with natural law.

VOLUME 3


PART I: PHYSIOLOGY

The studies in the first two sections document changes during the practice of the Transcendental Meditation technique unless otherwise stated.

A: Metabolic, Biochemical, and Cardiovascular Changes


Reduction in Biochemical Index of Stress: Decreased Plasma Cortisol Levels.


Reduction in Biochemical Index of Stress: Decreased Plasma Cortisol Levels.


Change in Hormonal Balance: Small Increase in Plasma Prolactin Levels following Transcendental Meditation.


Changes in Cardiac Output and Stroke Volume.


Large Increase in Blood Flow to the Brain.


Changes in Hormonal Balance as a Result of the TM-Sidhi Program: Short- and Long-Term Changes in Pituitary Hormone Levels Indicative of Increased Sensitivity in Endocrine Control Systems.


Experience of Pure Consciousness Associated with: Marked Reductions in Respiration and Heart Rates; Periodic Breath Suspension; Absence of Spontaneous Skin Resistance Responses. Maintenance of Relaxed Style of Physiological Functioning Outside of Meditation: Fewer Spontaneous Skin Resistance Responses.


Integration of Opposite Styles of Physiological Functioning: Simultaneous Increased Activity of Sympathetic and Parasympathetic Branches of Autonomic Nervous System.


Changes in Hormonal Balance: Decreased Serum Growth Hormone Levels.


Biochemical Indications of Reduced Stress: Decreased Serum Growth Hormone Levels; Decreased Serum Cortisol Levels; Decreased Serum Triiodothyronine Levels.

201. ROBERTSON, D. W., and PETERSON, J. W. Change in cardiac output during Transcendental Meditation as measured by noninvasive impedance plethysmography. Departments of Physical Education and Biomedical Engineering, University of Texas at Austin, Austin, Texas, U.S.A., 1980.

Changes in Cardiac Output and Stroke Volume.

Changes in Biochemical and Hormonal Balance outside the Practice of Transcendental Meditation: Decreased Levels of Catecholamine and Steroid Metabolites; Decreased Plasma Cortisol Levels. Improved Cardiovascular Health: Decreased Serum Cholesterol Levels. Benefits for Patients with Aggressive Behavior, Mental Retardation, and Epilepsy: Normalization of Neurotransmitter Metabolite Levels, Plasma Cortisol Levels, and EEG Features; Decreased Aggression in Aggressive Patients; Improved IQ and Cognitive Functioning in Mentally Retarded Subjects; Reduction of Frequency and Severity of Epileptic Seizures in Epileptic Patients.

203. JEVNING, R.; WILSON, A. F.; and PIRKLE, H. C. Behavioral control of red blood cell metabolism. Departments of Medicine, Physiology, and Pathology, University of California at Irvine, Orange, California, U.S.A., 1981.

Fundamental Change in Cellular Metabolism: Reduced Glucose Metabolism in Red Blood Cells.


Changes in Serotonergic Activity: Increased Urinary 5-Hydroxyindole Excretion.


Experience of Pure Consciousness Associated with: Periodic Breath Suspension; Marked Reductions in Metabolic Rate (Oxygen Consumption and Carbon Dioxide Elimination), Mean Respiration Rate, and Minute Ventilation Rate; Reduced Heart Rate; Increased Basal Skin Resistance; Stable Phasic Skin Resistance; Increased EEG Coherence in Theta, Alpha and Beta Bands.


Changes in Hormonal Balance as a Result of the TM-Sidhi Program: Short- and Long-Term Changes in Pituitary Hormone Levels Indicative of Increased Stability and Sensitivity in Endocrine Control Systems.


Indication of Deep Rest: Decreased Oxygen Consumption in Muscle Tissue.

208. O’HALLORAN, J. P.; JEVNING, R. A.; WILSON, A. F.; SKOWSKY, R.; and ALEXANDER, C. N. Behaviorally induced secretion of arginine vasopressin. Departments of Medicine and Physiology, University of California at Irvine, Orange, California, U.S.A.; Department of Endocrinology, Long Beach Veteran’s
Administration Hospital, Long Beach, California, U.S.A.; and Department of Psychology and Social Relations, Harvard University, Cambridge, Massachusetts, U.S.A., 1983.


B: Electrophysiological and Electroencephalographic Changes


Electromyographic Evidence of Deep Muscular Relaxation.


Increased Orderliness and Integration of Brain Functioning as a Result of the TM-Sidhi Program: Longitudinal Increases in Interhemispheric EEG Coherence.

211. ROUZERÉ, A.-M.; BADAWI, K.; and HARTMANN, R. High amplitude fronto-central alpha and theta activity during the Transcendental Meditation technique. Department of Neurophysiology, Maharishi European Research University, Seelisberg, Switzerland, 1979.

Increased Orderliness and Integration of Brain Functioning: Bursts of High Amplitude EEG Alpha and Theta Activity in Frontal and Central Regions.

212. CHENARD, J.-R. A controlled study of the influence of Transcendental Meditation on a specific value of the H-reflex (Hoffman reflex) recruitment curve and the surface EMG. Centre d’études universitaires dans l’Ouest Québécois, University of Quebec, Rouyn, Quebec, Canada, 1979.

Electromyographic Evidence of Deep Muscular Relaxation; Reduction in Amplitude of H-Reflex.


Experience of Pure Consciousness Associated with Periodic Breath Suspension and High EEG Coherence.


Changes in Brainstem Auditory Evoked Potentials following the Transcendental Meditation and TM-Sidhi Program Suggesting Improved Processing of Auditory Information.

215. ORME-JOHNSON, D. W.; WALLACE, R. K.; and DILLBECK, M. C. Long-
Increased Orderliness and Integration of Brain Functioning as a Result of the TM-Sidhi Program: Longitudinal Increases in EEG Alpha and Theta Coherence.

Clear Experiences of Pure Consciousness and TM-Sidhis Correlated with Higher Frontal EEG Alpha Coherence and Greater Creativity.

Increased Orderliness and Integration of Brain Functioning: Longitudinal Increase in Frontal EEG Alpha Coherence.

218. ORME-JOHNSON, D. W. Does the nervous system have a ground state? A description of high EEG coherence events in a single subject. Department of Psychology, Maharishi International University, Fairfield, Iowa, U.S.A., 1981.
Experience of Pure Consciousness Associated with Overall High EEG Coherence.

Improved Efficiency of Concept Learning as a Result of the TM-Sidhi Program; Correlations between High Frontal EEG Alpha and Theta Coherence, Greater Neurological Efficiency (Faster H-Reflex Recovery), and Greater Flexibility of Concept Learning.

EEG Differentiation between Transcendental Meditation and Napping.

High Frontal EEG Alpha Coherence Correlated with Superior Performance in Mathematics.

Physiological Correlate of Increased Coherence in Collective Consciousness.
Increased Intersubject EEG Coherence Due to Long-Range Influence of Group Practice of the TM-Sidhi Program.


High Frontal Alpha EEG Coherence Correlated with High Levels of Principled Moral Reasoning and Unified Cosmic Perspective on Life.


Increased Orderliness and Integration of Brain Functioning: Increased EEG Coherence in Alpha, Theta, and Beta Bands; Further Increases during the TM-Sidhi Program.


Correlations between High EEG Coherence and Superior Performance on Age-Related Psychological Variables: Fluency; Motor Speed; Reaction Time; Shape Memory; Flexibility. Length of Time Practicing TM-Sidhi Program Predictive of Higher Mean Right Alpha Coherence. *The studies in the following sections document changes outside the practice of the Transcendental Meditation and TM-Sidhi programs.*

C: Physiological Efficiency and Stability


Enhanced Neurological Efficiency as a Result of the TM-Sidhi Program: Facilitation of the Paired H-Reflex.


Enhanced Neuromuscular Efficiency: Decreased Reflex Latency and Reflex Motor Time.


Reduced Pain-Related Distress.

Enhanced Neurological Efficiency as a Result of the TM-Sidhi Program: Facilitation of the Paired H-Reflex.


Correlations between High EEG Coherence, Enhanced Neurological Efficiency (Paired H-Reflex Recovery), and Superior Academic Performance.


D: Health

Case History of Benefits for Patient Recovering from Severe Illness, Including Severe Bronchial Asthma and Heart Disease.

Improved Cardiovascular Health: Decreased Serum Cholesterol Levels in Normal and Hypercholesterolaemic Patients; Reduction of Blood Pressure to More Ideal Levels in Normotensive Subjects.

Better Health for Mother and Child during Pregnancy and Childbirth: Fewer Medical Complaints during Pregnancy; Less Pain and Anxiety during Pregnancy and Childbirth; Shorter Duration of Labour; Lower Frequency of Vacuum or Forceps Delivery and Other Operative Interventions during Labour; Greater Frequency and Longer Duration of Breast-Feeding.

Improved Cardiovascular Health: Decreased Blood Pressure in Patients with Mild and Moderate Hypertension.
Improved Cardiovascular Health: Long-Term Reductions in Serum Cholesterol in Hypercholesterolaemic Patients.

Better Periodontal Health.

Benefits in General Medical Practice: Improvements in General Health and in a Wide Variety of Physical and Mental Disorders Including Hypertension; Angina Pectoris; Bronchial Asthma; Chronic Bronchitis; Diabetes Mellitus; Menorrhagia; Periodontal Inflammation; Recurrent Upper Respiratory Infections; Allergic Rhinitis; Chronic Back Pain; Rheumatoid Arthritis; Dyspepsia; Chronic Colitis; Insomnia; Chronic Headaches; Anxiety; Depression; Fatigue; Obesity. Decreased Need for Tranquilizers, Sleep Medications, Anti-Asthmatics, Anti-Hypertensives, and Drugs for Hypertension, Asthma, and Heart Disease. Increased Cooperation with Medical Advice. Recovery from Major Illness, Chronic Musculo-Skeletal Complaints.

Multiple Improvements in Physical and Mental Health: Fewer Infectious Diseases; Better Health of the Respiratory and Digestive Systems; Less Eczema and Fewer Allergic Reactions; Less Depression; Greater Self-Actualization; Greater Self-Esteem; Better Social Relationships; Less Nervousness; Less Insomnia; Lower Use of Tranquilizers, Sleep Medication, and Analgesics; Fewer Accidents; Lower Usage of Cigarettes, Alcohol, Non-Prescribed Drugs, and Coffee.

240. YEE, A. C., and DISSANAYAKE, A. S. Glucose tolerance and the Transcendental Meditation program (a pilot study). MERU Research Institute, Singapore, and Department of Physiology, University of Singapore, Singapore. Paper presented at the International Congress on Research on Higher States of Consciousness at the Faculty of Science, Mahidol University, Bangkok, Thailand, 4–6 December 1980.
Improved Blood Sugar Homeostasis as Measured by Oral Glucose Tolerance Test.

Decreased Psychosomatic Complaints; Decreased Musculo-skeletal Complaints; Decreased Limitations Caused by Physical and General Ailments; Increased Efficiency; Increased Emotional Stability; Decreased Use of Medicines and Non-Prescribed Drugs; Decreased Over-Sensitivity.

242. WALLACE, R. K.; DILLBECK, M.; JACOBE, E.; and HARRINGTON, B. The

Reversal of Biological Aging: Younger Biological Age Compared with Control Subjects and Population Norms. Length of Time Practicing Transcendental Meditation Associated with Reduction in Biological Age.


Case History Illustrating Holistic Improvements in Physical and Mental Health Including Relief from Insomnia; Decreased Anxiety; Decreased Need for Tranquilizers; Fewer Headaches; Increased Enjoyment of Life, and Increased Efficiency.


Improved Cardiovascular Health: Lower Systolic Blood Pressure Compared to Norms for Age; Effect More Pronounced in Long-Term Meditators.


Reversal of Biological Aging: Longitudinal Reduction in Biological Age; Younger Biological Age Compared with Norms. Length of Time Practicing Transcendental Meditation and TM-Sidhi Program Correlated with Younger Biological Age and Younger Functional Age. Decreased Systolic Blood Pressure and Improved Auditory Threshold.

247. BROWNE, G. E.; FOUGÈRE, D.; ROXBURGH, A.; BIRD, J.; and LOVELL-SMITH, H. D. Improved mental and physical health and decreased use of prescribed and non-prescribed drugs through the Transcendental Meditation program. Age of Enlightenment Medical Council, Christchurch, New Zealand; Heylen Research Centre, Auckland, New Zealand; and Dunedin Hospital, Dunedin, New Zealand, 1983.

Improvements in Physical and Mental Health Correlated with Duration and Regularity of Practice of Transcendental Meditation; Decreased Use of Alcohol; Decreased Use of Cigarettes; Decreased Drug Abuse; Decreased Need for Anti-
E: Motor and Perceptual Ability


Improved Mind-Body Coordination: Faster Reactions (Visual Choice Reaction Time).


Reduced Need for External Stimulation.


Increased Behavioral Flexibility as a Result of the TM-Sidhi Program: Increased Perceptual Flexibility; Increased Psychomotor Speed; Increased Functional Efficiency of Psychomotor Co-ordination.


Increased Vigilance and Improved Capacity for Selective Attention: Faster Reactions with Fewer Mistakes (Visual Choice Reaction Time); Shorter Latency and Larger Amplitude of Visual Evoked Potentials.

252. SCHWARTZ, E. The effects of the Transcendental Meditation program on strength of the nervous system, perceptual reactance, reaction time, and auditory threshold. Master’s thesis (abstract), Department of Exercise Science, University of Massachusetts, Amherst, Massachusetts, U.S.A., 1979.

Increased Sensitivity, Strength, and Flexibility of the Nervous System; Improved Auditory Thresholds; Faster Reactions.


Improved Efficiency of Visual Perception; Increased Freedom from Habitual Patterns of Perception with Increased Ability to Use Such Patterns Effectively Where Appropriate.

254. ROWE, K. C.; NEUSCHATZ, J. S.; and NIDICH, S. I. Effect of the Transcendental Meditation and TM-Sidhi program on reaction time. State University of New York at New Paltz, New Paltz, New York, U.S.A.; Roger Williams College, Bristol, Rhode Island, U.S.A.; and Maharishi International University, Fairfield,
Iowa, U.S.A. Paper presented at the meeting of the American Psychological Association, Montreal, Quebec, Canada, September 1980.
Improved Mind-Body Coordination: Faster Reactions (Visual Choice Reaction Time).

More Stable Internal Frame of Reference: Greater Field Independence.

Improved Auditory Temporal Discrimination.

Length of Time Practicing TM-Sidhi Program Predictive of Superior Performance on Tests Measuring Age-Related Psychological Variables: Visual Memory; Creativity; Field Independence; Perceptual Speed; Motor Speed; Reaction Time; Non-Verbal Intelligence. Length of Time Practicing the TM-Sidhi Program Predictive of Younger Functional Age.

Experience of Higher States of Consciousness Positively Correlated with Superior Performance on Tests Measuring Perceptual Speed, Flexibility, Creativity, Intelligence, Field Independence, and Psycho-Motor Speed.

More Stable Internal Frame of Reference: Greater Field Independence.

PART II: PSYCHOLOGY

A: Intelligence, Learning, and Academic Performance

Increased Creativity: Increased Figural Flexibility and Originality; Increased Verbal Fluency.

Benefits for Students at Maharishi International University: Increased Intelligence; Increased Self-Confidence; Increased Sociability; Improved Psychological Health; Increased Social Maturity.


Improved Echolalic Behavior in Autistic Student.


Improved Speech, Social Behavior, Intelligence, and Physiological Functioning in a Mentally Retarded Subject


Improved Working Memory in School Children.


Benefits for High School Students: Increased Intelligence Growth Rate; Improved Learning Ability; Improved Moral Judgement.

B: Development of Personality


More Positive Conception of Human Nature; More Positive Self-Image; Higher Levels of Tolerance; Greater Sociability; Less Pronounced Feelings of Social Inadequacy.


Decreased Neuroticism; Decreased Insomnia; Decreased Use of Tranquilizers.

268. HANDMACHER, B. H. Length of time spent in the practice of Transcendental Meditation and sex differences related to intrapersonal and interpersonal orienta-

Less Anxiety; Less Depression; More Affectionate; More Tolerant; Less Tendency to Dominate; Less Interested in Superficial Social Contacts; More Selective in Personal Relationships; Less Need for Acceptance; More Inner-Directed.


Decreased Hidden Mental Turbulence: Decreased Neuroticism.


Enhanced Cognitive-Moral Development; Benefits of Transcendental Meditation Further Enhanced by the TM-Sidhi Program.


Improved Perception of Others.


Greater Beneficial Effect from Transcendental Meditation than from Other Meditation and Relaxation Procedures as Indicated by Meta-Analysis.


Cumulative Benefits for Psychological Health: Decreased Nervousness; Decreased Depression; Decreased Emotional Instability; Decreased Manifest Anxiety.


Stronger Self-Identity.


Decreased State and Trait Anxiety.
PART III: SOCIOLOGY

A: Rehabilitation

Decreased or Discontinued Use of Cigarettes.

Decreased Drug Abuse; Decreased Nervousness (Decreased Psychosomatic Disturbance); Decreased Depression (Increased Contentment, Increased Self-Confidence); Increased Sociability (Increased Friendliness, Increased Liveliness); Increased Placidity (Increased Self-Assuredness, Increased Good Humor, Decreased Tendency to Procrastinate); Decreased Inhibition (Increases in: Naturalness, Spontaneity, Self-Sufficiency); Increased Extroversion (Increased Capacity for Warm Interpersonal Relationships); Decreased Neuroticism (Increased Emotional Stability, Decreased Tension); Increased Self-Reliance (Increased Effectiveness, More Balanced Mood, Increased Vigor).

Rehabilitation of Prisoners: Decreased Anxiety; Decreased Neuroticism, Decreased Resentment; Decreased Negativism; Decreased Irritability; Decreased Hostility; Decreased Prison Disciplinary Rule Infractions; Improved Sleep Patterns (Decreased Time to Fall Asleep, Decreased Awakenings per Night, Improved Quality of Sleep).

Verification of Results of Paper 278.

Rehabilitation of Prisoners: Sustained Reductions in Neuroticism, Anxiety, Hostility, and Use of Cigarettes; Improved Sleep Patterns (Decreased Time to Fall Asleep, Decreased Awakenings per Night).

Benefits for Psychiatric In-Patients: Marked Improvements in Schizophrenia,
Manic-Depressive Psychosis, and Severe Personality Disorders; Decreased Anxiety and Tension.


Decreased Use of Alcohol; Decreased Drug Abuse.


Benefits for Patients with Psychiatric and Addictive Disorders in a Vocational Rehabilitation Unit: Greater Ability to Maintain Employment on Discharge; More Frequently Maintained on Out-Patient Care Alone.

284. ALEXANDER, C. N., and MARKS, E. J. Ego development, personality and behavioral change in inmates practicing the Transcendental Meditation technique or participating in other programs: A summary of cross-sectional and longitudinal results. Doctoral thesis of first author (summary), Department of Psychology and Social Relations, Harvard University, Cambridge, Massachusetts, U.S.A., 1982.

Rehabilitation of Prisoners: Greater Self-Development, Capacity for Warm Interpersonal Relationships, and Engagement in Private, Avocational Businesses; Lower Pathological Symptoms—Lower Psychopathic Deviation, Anxiety, Aggression, Tension, and Introversion; Growth toward Higher States of Consciousness; Longitudinal Increases in Self-Development and Decreases in Aggression, Anxiety, and Schizophrenic Symptoms.


Rehabilitation of Prisoners: Lower Recidivism Rate; Fewer New Convictions.


Rehabilitation of Prisoners: Lower Recidivism Rate; Higher Incidence of Clean Records; Fewer New Convictions.


Decreased Use of Tobacco; Decreased Use of Alcohol; Decreased Use of Marijuana.

288. ARON, A., and ARON, E. N. Rehabilitation of juvenile offenders through the

Rehabilitation of Juvenile Offenders: Decreased Anxiety.

PART IV: REVIEW PAPERS

A: Health


Research findings on the Transcendental Meditation and TM-Sidhi program are reviewed in the context of current knowledge of the aging process and the usual physiological and psychological changes associated with aging.


Treatment of Obesity: More Successful Weight Reduction; Improved Psychological Health in Obese Subjects—Decreased Anxiety; Decreased Nervousness (Decreased Psychosomatic Disturbance); Decreased Aggressiveness (Increased Self-Control, Increased Emotional Maturity); Decreased Depression (Increased Contentment, Increased Self-Confidence); Increased Sociability (Increased Friendliness, Increased Liveliness); Increased Placidity (Increased Self-Assuredness, Increased Good Humor); Decreased Tendency to Dominate (Increased Respectfulness); Decreased Inhibition (Increases in Naturalness, Spontaneity, Self-Sufficiency); Increased Extroversion (Increased Capacity for Warm Interpersonal Relationships); Decreased Neuroticism (Increased Emotional Stability).

VOLUME 4


PART I: PHYSIOLOGY

The studies in the first two sections document changes during the practice of the Transcendental Meditation technique unless otherwise stated.
A: Metabolic, Biochemical, and Cardiovascular Changes


Indication of Deep Rest: Decreased Oxygen Consumption in Muscle Tissue. Reduction in Biochemical Index of Stress: Decreased Arterial Lactate Levels.


Fundamental Change in Cellular Metabolism: Reduced Glucose Metabolism in Red Blood Cells. Normal Arterial Oxygen and Carbon Dioxide Partial Pressures. Reduction in Biochemical Index of Stress: Reduced Spontaneous Skin Resistance Responses.


Decreased Minute Ventilation (Decreased Tidal Volume); Increased Basal Skin Resistance; Periodic Breath Suspension; Changes in Chemical and Neural Control of Breathing.

B: Electroencephalographic Changes


Increased Orderliness and Integration of Brain Functioning: Increased EEG Coherence. Correlations between Increased Frontal EEG Coherence and Increased Creativity; Correlations between Changes in EEG Coherence and Increased Grade Point Average, Increased Verbal Intelligence, Decreased Neuroticism, and Enhanced Principled Moral Reasoning.

295. MISZCZAK, J., and ACHIMOWICZ, J. Hybrid analysis of spontaneous brain activity in different states of conscious experience. Military Institute of Aviation Medicine, Warsaw, Poland. Results presented at the 5th Annual Meeting on EEG
Increased Orderliness and Integration of Brain Functioning: Synchronized High Amplitude Frontal EEG Theta Activity.


C: Health


300. ALEXANDER, C. N.; DAVIES, J. L.; NEWMAN, R. I.; and CHANDLER, H. M. The effects of Transcendental Meditation on cognitive and behavioral flexibility, health, and longevity in the elderly: An experimental comparison of the Transcendental Meditation program, mindfulness training, and relaxation. Department of Psychology and Social Relations and Graduate School of Education, Harvard University, Cambridge, Massachusetts, U.S.A., and Macquarie University, North Ryde, New South Wales, Australia, 1983. Benefits for the Elderly: Increased Longevity; Increased Cognitive and Perceptual Flexibility; Increased Behavioral Flexibility; Increased Learning Ability; Improved Mental Health and Sense of Well-Being; More Ideal Levels of Blood Pressure.

D: Motor and Perceptual Ability

301. SCHWARTZ, E. The effects of the Transcendental Meditation program on
strength of the nervous system, perceptual reactance, reaction time, and auditory threshold. Master’s thesis (abbr.), Department of Exercise Science, University of Massachusetts, Amherst, Massachusetts, U.S.A., 1979.

Increased Sensitivity, Strength, and Flexibility of the Nervous System; Improved Auditory Thresholds; Faster Reactions at High and Low Levels of Stimulation; Decreased Perceptual Reactance.


Improved Auditory Thresholds; Decreased Heart Rate.

PART II: PSYCHOLOGY

A: Intelligence, Learning, and Academic Performance


Benefits of Maharishi’s Integrated System of Education Perceived by Students at Maharishi International University: Better Academic Atmosphere; Greater Expectation to Gain Higher Degrees; Greater Motivation to Learn; Greater Enjoyment of School; Greater Mental Stability and Sense of Personal Security; Greater Sense of Control over Direction in Life; Greater Clarity of Personal Values; Greater Sensitivity to Other’s Needs and Feelings; Greater Mental and Physical Relaxation; Better State of Physical Health.

Enrichment of Creativity and Appreciation in Artists.


Benefits for Graduate Students: Improved Academic Performance.


Benefits of Maharishi’s Integrated System of Education for Students at Maharishi International University: Increased Intelligence; Increased Field Independence.

B: Development of Personality


Less Nervousness (Less Psychosomatic Disturbance); Less Aggressiveness (Greater Self-Control, Greater Emotional Maturity); Less Depression (Greater Contentment, Greater Self-Confidence); Less Irritability (Greater Calm in Frustrating Situations, Greater Tolerance); Greater Placidity (Greater Self-Assuredness, More Good Humor, Less Tendency to Procrastinate); Less Inhibition (Greater Naturalness, Greater Spontaneity, Greater Self-Sufficiency); Less Neuroticism (Greater Emotional Stability, Less Tension); More Relaxation; More Activation; More Elation; Less Anxiety; Less Fatigue; Less Physical Tension; Less Physical Weakness; Increased Physical Well-Being.


Greater Well-Being; Greater Sensitivity—Greater Ability to Focus Intently and Greater Responsiveness. Lower Anxiety; Lower Neuroticism.


Decreased Trait Anxiety: Greater Benefit from Transcendental Meditation than from Other Meditation Techniques and Relaxation Procedures as Demonstrated by Meta-Analysis.


Growth of Higher States of Consciousness. Experiences of Higher States of Consciousness Correlated with: Better Self-Concept (Greater Self-Actualization, Greater Internality of Locus of Control); Greater Creativity (Greater Fluency, Flexibility, and Originality); Profound Physiological Rest (Episodes of Spontaneous Breath Suspension during Transcendental Meditation); Greater Neurological Integration (High EEG Alpha and Theta Coherence); Greater Neurophysiological Efficiency (Faster H-Reflex Recovery); Superior Cognitive, Perceptual, and Motor Skills (Superior Perceptual Speed, Motor Speed, Psychomotor Speed and Flexibility, Nonverbal Intelligence, and Visual Memory); Less Symptoms of Stress (Lower Anxiety, Aggression, Depression, Introversion, and Neuroticism); Greater Capacity for Absorbing Experiences. (The correlates of higher states of consciousness summarized in this paper are drawn from both new experimental findings and the results of other studies reported in the volumes of this series.)

PART III: SOCIOLOGY

A. Rehabilitation


Improvements in Post-Vietnam Adjustment Problems: Decreased Post-Vietnam Stress Disorder; Decreased Anxiety; Decreased Depression; Decreased Alcohol Consumption; Decreased Insomnia; Improved Employment Status; Decreased Family Problems.


Rehabilitation of Prisoners: Decreased Sleep Disturbance (Decreased Awakenings per Night, Decreased Time to Sleep Onset, Improved Quality of Sleep); Decreased Paranoid Anxiety; Increased Internality of Locus of Control; Decreased Hostility;
Greater Control of Anger. Benefits for Correctional Staff: Decreased Sleep Disturbance; Decreased Hostility; Decreased Paranoid Anxiety.

B. Quality of Life


Greater Marital Satisfaction: Greater Marital Adjustment.


Benefits for Married Couples: Decreased Nervousness (Increased Composure and Relaxation); Increased Sociability, Energy, and Enthusiasm; Increased Ability for Spontaneous Expression of Warmth and Affection; Increased Ability to Be Sympathetic, Compassionate, and Understanding; Increased Ability to Be Objective, Fair-Minded, and Reasonable; Increased Tolerance and Acceptance of Others; Increased Self-Discipline; Decreased Impulsiveness (Increased Emotional Maturity); Decreased Proneness toward Anxiety.

The following papers in this section document the growth of coherence in the collective consciousness of cities, states, nations, and the world.


Improved Quality of City Life: Decreased Automobile Accident Rate; Decreased Suicide Rate (Cities, U.S.A., 1973–1977).


Improved Quality of Provincial Life as Measured by an Index Including: Total Crime Rate, Mortality Rate, Motor Vehicle Fatality Rate, Auto Accident Rate, Unemployment Rate, Pollution, Beer Consumption Rate, and Cigarette Consumption Rate (Rhode Island, U.S.A., 1978).


Increased Harmony in International Affairs (Worldwide, 1978); Improvements in Domestic Affairs and International Relations for Major Trouble-Spot Countries (1978); Decreased War Deaths [Rhodesia (Now Zimbabwe), 1978].


Improved Quality of National Life: Decreased Violent Crime; Decreased Motor Vehicle Fatalities; Decreased Number of Fatalities from Accidents, Suicide, and Homicide; Decreased Air Traffic Fatal Accidents; Increased Confidence, Optimism, and Economic Prosperity: Rise in Stock Market Index (U.S.A., 1979).


Improved Quality of National Life: Decreased Crime (Holland, 1979 and 1981); Decreased Automobile Accidents with Injury (Holland, 1979)

326. DILLBECK, M. C.; CAVANAUGH, K. L.; and BERG, W. P. VAN DEN. The
effect of the group dynamics of consciousness on society: Reduced crime in the Union Territory of Delhi, India. Maharishi International University, Fairfield, Iowa, U.S.A.; University of Washington, Seattle, Washington, U.S.A.; and Maharishi European Research University, Seelisberg, Switzerland, 1983.

Improved Quality of Provincial Life: Decreased Crime (Delhi, India, 1980–1981).


Improved Quality of National Life: Decreased Motor Vehicle Fatalities (U.S.A., 1982).


Improved Quality of Community Life: Cessation of Attack on a Community and Protection from Ongoing Armed Conflict in the Surrounding Area (Lebanon, 1982–1984).


Improved Quality of National Life as Measured by an Index Including: Crime Rate, Percentage of Civil Cases Reaching Trial, Rate of Infectious Diseases, Infant
Mortality Rate, Suicide Rate, Cigarette Consumption, Alcohol Consumption, Gross National Product, Patent Application Rate, Number of Degrees Conferred, Divorce Rate, and Traffic Fatalities (U.S.A., 1976–1983).


Improved Quality of National Life as Measured by Composite Indices Comprising Data on War Intensity in Lebanon, Newspaper Content Analysis of Israeli National Mood, Tel Aviv Stock Index, Automobile Accident Rate in Jerusalem, Number of Fires in Jerusalem, and Maximum Temperature in Jerusalem; Significant Improvement in Each Variable in the Index (Israel, 1983). Decreased War Deaths (Lebanon, 1983).


Improved Quality of National Life: Increased Progress towards Peaceful Resolution of Conflict and Decreased War Intensity; Decreased War Deaths and War Injuries (Lebanon, 1983–1984); Increased Confidence and Economic Prosperity: Improved Foreign Exchange Rate (Lebanon, 1984).


PART IV: REVIEW PAPERS

Papers 338 to 355 review the application of the Transcendental Meditation and TM-Sidhi program in the areas of health, education, development of personality, rehabilitation, and quality of life.

A: Health


The author discusses the benefits of the Transcendental Meditation program in general medical practice and shows that it represents a major breakthrough in the field of health.


The Transcendental Meditation and TM-Sidhi program is presented as the direct means to perfect health for both the individual and society.


This paper provides an extensive discussion of electrophysiological and biochemical research on the Transcendental Meditation and TM-Sidhi program, including some interesting findings on EEG coherence not previously reported in the literature.

The Transcendental Meditation and TM-Sidhi program is found to result in a coherent state of neurophysiological functioning which is maintained during activity. This forms the basis for optimal human performance and the development of higher states of consciousness as described in the Vedic Literature.


The Transcendental Meditation and TM-Sidhi program is found to have profound benefits for the prevention and cure of illness and the promotion of perfect health for both the individual and society.


A review of research demonstrates that the Transcendental Meditation technique is an effective means of eliminating stress. This effect is shown to be of great importance in the field of dental and oral health.


This paper presents the Transcendental Meditation program as the means for developing a state of perfect health, thereby bringing fulfillment to the medical sciences.

B: Education


This paper discusses a unique method of student assessment being pioneered at Maharishi International University, which includes an evaluation of the psychophysiological correlates of the growth of higher states of consciousness. The findings of the student assessment program indicate that the Transcendental Meditation and TM-Sidhi program not only makes an important contribution to the realization of traditional academic goals but also promotes a holistic development of the student’s life.


This paper presents the Transcendental Meditation and TM-Sidhi program as a scientifically validated educational technology for the full development of the know-
er, which has been successfully implemented at all levels of education. Furthermore, the application of this technology in educational institutions is found to contribute directly to the quality of life of the whole society.


The Maharishi Technology of the Unified Field is found to fulfill the highest goals of education by bringing life in alliance with the total potential of natural law. Research on the Maharishi Technology of the Unified Field and experience of its application at all levels of education have shown that unified field based education not only fosters academic excellence, but also unfolds the full potential of individual and collective life.

C: Personality


This paper discusses how the Transcendental Meditation and TM-Sidhi program brings fulfillment to the ideal of a ‘cosmic perspective’, as expressed in Kohlberg’s Stage 7, and shows that the psychophysiological basis of this state can now be clearly understood in the light of the scientific research on the Transcendental Meditation and TM-Sidhi program.


Research on the Transcendental Meditation and TM-Sidhi program is found to provide experimental evidence for the Vedic description of human psychology and the growth of higher states of consciousness, as contained in the Bhagavad–Gita. In particular, the known effects of the Transcendental Meditation and TM-Sidhi program are shown to verify three concepts that are central to the Vedic Psychology of the Bhagavad–Gita: the existence of the experience of transcending; the growth of the qualities of enlightenment as a result of this experience; and the nature of the transcendent as a universal ‘field’ of consciousness.

D: Rehabilitation

350. DEVAKAR. Correctional technique—A fresh approach through SCI. Department of Social Work, Kashi Vidyapeeth, Varanasi, Uttar Pradesh, India. Paper presented
at the Third All India Penological Conference, Lucknow, Uttar Pradesh, India, 22–24 November 1975.

The author discusses insights from the Science of Creative Intelligence into the problem of criminal behavior, and proposes the application of its practical aspect, the Transcendental Meditation program, as a solution to the current crisis in criminal correction.


This paper reviews research showing that the Transcendental Meditation program is effective in counteracting a wide variety of addictive behaviors. The authors locate the basis of this effect in the comprehensive physiological, psychological, and social benefits which have been found to result from Transcendental Meditation.


The first part of this paper summarizes research on the Transcendental Meditation program in prisons and presents an overview of the physiological, psychological, and sociological findings in terms of the growth of stability and adaptability. The second part presents the perspective of the Science of Creative Intelligence on law, justice, and rehabilitation.


The paper reviews research demonstrating that the Transcendental Meditation and TM-Sidhi program produces consistent beneficial effects for both criminal rehabilitation and crime prevention.

E: Quality of Life


This paper presents the Transcendental Meditation and TM-Sidhi program as a means to strengthen family life by developing higher states of consciousness for the individual and creating an influence of coherence and harmony in the social environment.

This proposal presents the group practice of the Transcendental Meditation and TM-Sidhi program as the practical technology for creating coherence in national and world consciousness, thereby establishing a permanent state of social harmony and world peace.

VOLUME 5


PART I: PHYSIOLOGY

The studies in the first section document changes during the practice of the Transcendental Meditation technique unless otherwise stated.

A: Metabolic, Biochemical, and Cardiovascular Changes


A Unique State of Deep Rest: Meta-Analysis of 31 Studies; Higher Basal Skin Resistance; Lower Respiration Rate; Lower Plasma Lactate. Lower Baseline Levels of Spontaneous Skin Resistance Responses, Respiration Rate, Heart Rate, and Plasma Lactate.


A Unique State of Deep Rest: Reduction in Metabolic Rate; Reduction in Heart Rate.


A Unique State of Deep Rest: Lower Heart Rate; Decreased Breath Rate; Episodes of Spontaneous Respiratory Suspension (Without Compensatory Hyperventilation). Increased Alertness: Faster Reaction Time after the Practice. Lower Heart Rate outside the Practice.

359. GARNIER, D.; CAZABAT, A.; THÉBAULT, P.; and GAUGE, P. An experimental study: pulmonary ventilation during the Transcendental Meditation technique—
applications in preventive medicine. Summary of a paper that appeared in *Est-

A Unique State of Deep Rest: Lower Oxygen Consumption per Kilo Body Weight during and outside TM Practice.


Unique Pattern of DNA Repair.


Unique State of Deep Rest: Reduced Difference between Arterial and Venous CO2 Content in Forearm Metabolism.


A Unique State of Deep Rest: Marked Decline of Red Cell Metabolism.


Increased Endocrinological Efficiency: Long-Term Reduction in Basal Levels of Pituitary Hormones (TSH, Growth Hormone, and Prolactin), with Maintenance of Adrenal and Thyroid Hormone Levels.


More Efficient Neuroendocrine Regulation: Reduction of Pituitary Hormone TSH with Maintenance of Thyroid Hormones and Insulin Levels. Lower Baseline TSH Levels in Long-Term TM Participants.


Neurotransmitter Modulation: Change in Daily Cycle of Urinary 5-Hydroxyindoles, Metabolites Related to Serotonin.


Hormonal Growth: Increased Plasma Level of Arginine Vasopressin, Associated with Body Fluid Balance and with Learning and Memory.
MODERN SCIENCE AND VEDIC SCIENCE


Improved Stress Reactivity: Lower Beta-Adrenergic Receptor Sensitivity; Lower Blood Reactivity to Stress; Lower Resting Blood Pressure; Lower Resting Epinephrine Level.


Lower Chronic Stress: Normal Neuroendocrine Reactivity; Meditating Type A Subjects Showed Healthy Neuroendocrine Pattern.

B: Electrophysiological and Electroencephalographic Changes


EEG Differentiation between Transcendental Meditation and Napping.


Increased Functional Organization of the Brain: Increased EEG Coherence during TM Practice. Improved Mental Health; Decreased Anxiety; Decreased Neuroticism; Faster Recovery from Stress.


Increased Functional Organization of the Brain: Increased EEG Coherence during TM Practice. Improved Self-Concept: Increased Self-Satisfaction; Increased Moral-Ethical Self; Increased Social Self; Decreased General Maladjustment; Decreased Personality Disorder.

Increased Frontal EEG Coherence during Acquisition of New Information; More Settled Physiological Response during Cognitively Demanding Tasks.


Increased Order-Producing Activity of the Brain during Sleep as Indicated by the Ratio of High Frequency to Low Frequency REM.


Faster Processing of Cognitively Complex Information in the Elderly as Measured by Event-Related Potentials.


Increased EEG Coherence at the Moment of Performance of TM-Sidhi Yogic Flying.

C: Health


Hormone Levels Indicating Younger Biological Age.


Lower Erythrocyte Sedimentation Rate Levels Indicating Less Serious Illness and Slower Aging.


Lower Health Insurance Utilization Rates: Significantly Fewer Hospital Inpatient Days, Outpatient Visits; Fewer Inpatient Admissions for All Major Categories of Disease.


Lower Health Insurance Utilization Rates among MIU Faculty and Staff.

Benefits for the Elderly Demonstrating Reversal of Aging: Increased Longevity; Increased Cognitive Flexibility (Including Increased Learning Ability and Greater Perceptual Flexibility); Increased Word Fluency; Improvements in Self-Reported Measures of Behavioral Flexibility and Aging; Greater Sense of Well-Being; Improved Mental Health; Reduction of Blood Pressure to More Ideal Levels.

PART II: PSYCHOLOGY

A: Intelligence, Learning, and Academic Performance


Increased Quiet Alertness in Newborns of Mothers Practicing the Transcendental Meditation and TM-Sidhi Program.


Accelerated Cognitive Development in Four-Year-Old Children Practicing the Children’s Transcendental Meditation Technique.


Advanced Cognitive Development in Children.


Increased Field Independence (Growth of a More Stable Internal Frame of Reference, Increased Perceptual Acuity) in Children.


Increased Academic Achievement for Both Incoming and Continuing Students at Maharishi School of the Age of Enlightenment.

386. NIDICH, S. I., and NIDICH, R. J. Increased academic achievement at Maharishi

Improved Scores on Social Studies, Literary Materials, Reading, Quantitative Thinking, and General Academic Achievement for Students at Maharishi School of the Age of Enlightenment.


Increased Academic Achievement and IQ as a Function of Number of Months Practicing the Transcendental Meditation and TM-Sidhi Program in Secondary School Students.


Increased Morale, Facilitative Leadership, and Influence in Decision Making Concerning Classroom Instruction in Teachers Practicing the Transcendental Meditation Program.


Increased Fluid Intelligence and Field Independence (Growth of a More Stable Internal Frame of Reference, Increased Perceptual Acuity) in College Students.


Improvements in General Intelligence and Reaction-Time Measures (Which are Correlated with Intelligence).


Enhanced Academic Performance in Postgraduate Students.


Enhanced Creativity and Intelligence.

Reduction of Aging Effects as Assessed by Perceptual/Motor Speed and Non-Verbal Intelligence.

**B: Development of Personality**


Orientation toward Positive Values: Better Recall for Positive than Negative Words; Lower Recognition Thresholds for Positive Words than Negative Words; Differential Recognition Threshold for Positive and Negative Affect Terms Correlated with the Intensity of the Experienced Positive and Negative Affects; More Positive Appraisal of Others.


Student Psychological Development: Increased Psychological Health as Indicated by Unifying Ability, Autonomy, Intrinsic Spirituality, Creativity, Directness, Well-Being, and Integration of the Personality; Higher Growth Rate on Several of These Indicators.


Psychological Development: Higher Scores on General Factor of Psychological Health; Higher Growth Rate Longitudinally; Scores on Psychological Health Associated with Physiological Indicators of Transcendental Consciousness.


Experiences of Higher States of Consciousness: More Frequent Experiences of Transcendental Consciousness.

**PART III: SOCIOLOGY**

**A: Rehabilitation**


Rehabilitation of Prison Inmates: Reduced Recidivism after Release.
B: Productivity and Quality of Life


Increased Productivity and Performance in Business: Increased Efficiency and Productivity; Improved Work and Personal Relationships; Reduced Anxiety; Reduced Job Worry and Tension; Improved Job Satisfaction; Improved General Health; Enhanced Sleep and Reduced Fatigue; Reduced Cigarette and Liquor Consumption; Increased Physiological Stability during Task Performance.

400. CHEN, M. E. A comparative study of dimensions of healthy functioning between families practicing the TM program for five years or for less than a year. Dissertation Abstracts International 45(10) 3206B, 1984.

Improved Family Life: Family Health.

The following papers in this Section document the growth of coherence in the collective consciousness of cities, states, nations, and the world.


Improved Quality of National Life as Measured by a Monthly Index of Inflation and Unemployment (United States, 1979–1988), Controlling for Monetary Growth and the Rate of Change of Crude Materials Prices.


Improved Quality of National Life as Measured by a Monthly Index of Inflation and Unemployment (United States, 1979–1988), Controlling for Monetary Growth and the Rate of Change of Crude Materials Prices, and a Measure of the Money Supply.


Improved Quality of National Life as Measured by a Monthly Index of Inflation and Unemployment (United States, 1979–1988), Controlling for Changes in Major Economic Variables.


Improved Quality of National Life: Reduction of Conflict in Lebanon (Increased Cooperation, Reduced Level of Conflict, Reduced War Fatalities, and Reduced War Injuries); Improvement on a Daily Index Composed of All Four of these Variables (1983–1985).


Improved International Relations: Reduced Conflict Globally, Reduced Terrorism, and Increase in World Index of Stock Prices, during Three Large Assemblies of Participants in the Transcendental Meditation and TM-Sidhi Program (1983–1985).

### PART IV: THEORETICAL AND REVIEW PAPERS

#### A: Health


The fundamental principle of Vedic Physiology is that consciousness is the basis of physiology. This paper outlines and reviews the expression of consciousness at each level of the physiology and reviews research on physiological correlates of higher states of consciousness developed through the Transcendental Meditation and TM-Sidhi program.

Maharishi Ayur-Ved rasyanas (herbal and mineral preparations) and the Maharishi Panchakarma program of purification procedures have both been found to have a wide range of beneficial effects on physical and mental health as indicated by biochemical and clinical studies.


The authors review the large body of research indicating improved individual and collective health through the Transcendental Meditation program and propose that it be applied on a large scale to improve public health and reduce health care costs.

### B: Education


The authors outline the principles and practical techniques of the Maharishi Unified Field Based Integrated System of Education and review research indicating the ability of this system to develop the cognitive, affective, and physiological characteristics of the student that contribute to successful learning.


The authors review research on the success of Maharishi Schools of the Age of Enlightenment in fostering positive educational outcomes and promoting student development.

417. DOW, M. A. A unified approach to developing intuition in mathematics. This paper is an abridged version of a paper presented to the Eugene Strens Memorial Conference on Intuitive and Recreational Mathematics and Its History, Calgary, Canada, July/August 1986. The original paper will appear in the proceedings of this conference, edited by Richard K. Guy, to be published by the Mathematical Association of America in their series MAA Notes.

This paper describes how the development of consciousness through the Transcendental Meditation program fulfills current needs in mathematics education by culturing mathematical intuition.

### C: Personality and Development

418. ALEXANDER, C. N.; CRANSON, R. W.; BOYER, R. W.; and ORME-JOHNSON, D. W. Transcendental consciousness: a fourth state of consciousness beyond

The authors review physiological research indicating that transcendental consciousness is a unique fourth major state of consciousness.


The authors outline how the experience and understanding of higher states of consciousness found in Maharishi’s Vedic Psychology fulfills the aspiration of developmental psychology to comprehend the full development of human life.

D: Rehabilitation


This paper reviews the research on the application of the Transcendental Meditation program in corrections, including improved mental health and reduced hostility among inmates, and reduced recidivism upon release. The authors propose the implementation of the Transcendental Meditation program in correctional settings on a large scale, in order to promote effective rehabilitation and thereby reduce the substantial financial and human costs to society of incarceration.


This paper reviews the results of studies indicating that the practice of the Transcendental Meditation program reduces substance abuse.

E: Quality of Life


This paper reviews Maharishi’s theoretical principles of collective consciousness and the empirical research demonstrating improved quality of life at the city, state, national, and international levels. The research indicates that an influence of peace is created worldwide through the group practice of the Transcendental Meditation and TM-Sidhi program by at least 7000 individuals—the square root of one percent of the world’s population.
F: Maharishi’s Vedic Psychology


This paper introduces basic concepts of Maharishi’s Vedic Psychology and compares its major principles to those of twentieth-century psychology. The author concludes that Maharishi’s Vedic Psychology fulfills the theoretical and applied goals of psychology.


This paper presents the field of pure consciousness, or cosmic psyche, as the source of all mental and physical phenomena. The qualities of this field are verified through several approaches, including direct experience and scientific research.


This paper outlines how, from the perspective of Maharishi’s Vedic Psychology, the field of pure consciousness sequentially gives rise to the diversity of subjective and objective existence. Research is reviewed indicating that all levels of subjective life are enriched from their basis, pure consciousness, through the Transcendental Meditation and TM-Sidhi program.


This paper outlines the sequential unfoldment of higher states of consciousness brought to light by Maharishi and reviews the scientific research indicating the development of higher states through the Transcendental Meditation and TM-Sidhi program.


This paper introduces Maharishi’s TM-Sidhi program as the technique to enliven the self-interacting dynamics of consciousness in the awareness of the individual, thereby accelerating growth of higher states of consciousness; it also reviews the scientific research on the TM-Sidhi program.

G: Maharishi’s Vedic Science and the Foundations of Mathematics and Physics

428. WEINLESS, M. The samhita of sets: Maharishi’s Vedic Science and the founda-

This paper reviews basic concepts of set theory and other foundational perspectives in mathematics in relation to the central principles of Maharishi’s Vedic Science.


This paper presents an introduction to unified quantum field theories followed by a discussion of theory, research, and subjective experiences from Maharishi’s Vedic Science, in which pure consciousness is described as the unified field of all the laws of nature.


The author proposes the renaming of the basic forces and particles of nature in light of their basis in the unified field; he outlines how Maharishi’s Vedic Science brings fulfillment to this aspiration, and reviews research indicating that the unified field can be directly experienced and utilized by human awareness through the Transcendental Meditation and TM-Sidhi program.

RECENT RESEARCH ON MAHARISHI’S TRANSCENDENTAL MEDITATION AND TM-SIDHI PROGRAM

PART I: PHYSIOLOGY

The studies in the first two sections document changes during the practice of the Transcendental Meditation technique unless otherwise stated.

A: Metabolic, Biochemical, and Cardiovascular Changes


Indications of Younger Biological Age: Increased DHEAS Levels in Female and Older Male Practitioners of the TM and TM-Sidhi program.


Increased Serotonin Turnover Correlated with Group Size of TM-Sidhi Participants.

433. HILL, D. A. Beta-adrenergic receptor sensitivity, autonomic balance and serotonin-

Decreased Sensitivity to Stress Hormones; Increased Autonomic Balance; More Stable Balance of the Physiology.


Decreased Melatonin Turnover; Decreased State-Trait Anxiety.


Increased Whole Body Serotonin Metabolism; Reduced Mood Disturbance.


Decreased Baseline Plasma Serotonin Relative to Controls. (In contrast to whole body serotonin metabolism, low plasma serotonin indicates deceased stress and decreased risk of high blood pressure.)


Improved Adaptation to Stress: Reduced Cortisol Levels in Non-Stressful Situations and Enhanced Cortisol Response During Stressful Challenge with Rapid Return to Baseline.


Increased Serotonin Turnover and Subjective Experience of Bliss during Meditation and in Daily Activity Correlated with the Size of a Group of TM-Sidhi Participants.

More Adaptive Biochemical Response to Stress: Decreased Baseline Cortisol and Decreased Overall Cortisol During Stress Session; Decreased TSH Response to Stress; Increased GH Response to Stress; Increased Testosterone Response to Stress.


Biochemical Indications of Decreased Stress (Lower Levels of ACTH; Beta-Endorphin; CD4 Lymphocytes; and Higher Levels of Natural Killer Cells, Implying Increased Protection from Cancer).

**B: Electrophysiological and Electroencephalographic Changes**


442. ORLOVA, T. V.; PETRENKO, E. V.; and LYUBIMOV, N. N. Cerebral control of afferent somatosensory projections. Presented at the International Symposium of Macro and Microlevels of Brain Organization in the Norm and Pathology, Moscow, 1992.

Increased Amplitude of Cortical and Brain Stem Responses to Somatosensory Stimuli.


EEG Indications of Restful Alertness: Coexistence of High and Low Amplitude Theta Activity with Alpha Activity; Occurrence of Delta Waves with Occasional Overlap by Fast Frequencies; High Amplitude Theta Activity Alternating with Alpha Activity; Increased Intrahemispheric Coherence in the Alpha and Theta Frequency Bands.


Stabilized Restful Alertness: Alpha Activity During Yogic Flying.


Indication of Pure Consciousness at the Transition between Waking, Sleeping, and
Dreaming: Spreading and Increased Duration of Alpha Activity to the Frontal Cortex.


Faster Neurocognitive Processing.


Increased EEG Coherence and Power during Yogic Flying.


Preservation of Neurocognitive Processing Speed with Age.


Increased Efficiency and Decreased Age-Related Deterioration of Cognitive Information Processing as Measured by Event-Related Potentials.


Improved Efficiency of Information Transfer in the Brain: Shorter Latencies of Auditory Evoked Potentials (P300).

C: Health

453. ALEXANDER, C. N.; LANGER, E. J.; NEWMAN, R. I.; CHANDLER, H. M.; AND DAVIES, J. L. Transcendental Meditation, mindfulness, and longevity: an experimental study with the elderly. *Journal of Personality and Social Psychology*
Benefits for the Elderly Demonstrating Reversal of Aging: Increased Longevity (Higher Survival Rate); Reduction of Systolic Blood Pressure to More Ideal Levels; Improved Mental Health (Improvements on Nurses’ Mental Health Ratings); Increased Cognitive Flexibility (Less Premature Cognitive Commitment, Increased Learning Ability on Associate Learning and Greater Perceptual Flexibility); Increased Word Fluency; Improvements in Self-Reported Measures of Behavioral Flexibility and Aging (Greater Ability to Cope with Inconvenience, Reduced Feelings of Being Old, Less Impatience with Others); Greater Sense of Well-Being (Feeling Better During the TM Program, High Interest in the TM Program and High Ratings of the Value of the TM Program; Feeling Better and More Relaxed After the TM Program).


Reduction of High Blood Pressure.


Improved Immune Response to Stress.


Improvements in General Physical and Mental Well-Being in Industrial Workers: Decreased Physical Complaints; Decreased Impulsive Tendency; Reduced Emotional Instability; and Decreased Neurotic Tendency.


Improved Sleep and Decreased Smoking in Industrial Workers: Decreased Time to Fall Asleep; Reduced Waking During the Night; Decreased Smoking; Fewer Cigarettes Smoked per Day.


Decreased Medical Care Expenditures; Greatest Savings for Elderly and High Cost People.


Prevention of Disease: Lower Levels of Free Radicals in the Elderly.

PART II: PSYCHOLOGY

A: Intelligence, Learning, and Academic Performance


Improvements in General Intelligence Measured by Psychometric Tests and Choice Reaction Time.


Decreased Arousal; Broad Attention; Increased Perceptual and Conceptual Flexibility.


Field Independence Correlated to College Art Achievement; Higher Field Independence.


Growth of a Stable Internal Frame of Reference: Higher Level of Field Independence; Correlation of Field Independence with Grade-Point Average and Art Achievement.


Increased Creativity (Increased Ability to Interpret and Associate Freely, Increased Productive Imagination); Increased Fluid Intelligence (Increased Ability to
Perceive Complex Relations, More Effective Use of Short Term Memory, Improved Ability to Reason Abstractly; Decreased Inspection Time (Increased Speed of Information Processing, Decreased Noise in the Information Processing System, Increased Focus); Increased Field Independence (Greater Ability to Differentiate Experience, Greater Cognitive Clarity, Broad Comprehension and Improved Ability to Focus); Increased Constructive Thinking (Improved Emotional Coping, Improved Behavioral Coping, Improvements on Categorical Thinking—Increased Flexibility of Attitude and Increased Tolerance of Others); Decreased State and Trait Anxiety.

B: Development of Personality


Most Effective Means of Increasing Self-Actualization.


Growth of Wisdom: Increased Ego Development—Improved Affective Functioning and Cognitive Development.


Increased Psychological Health and Orientation Towards Positive Values.


This paper presents subjective experiences, theory, and research on Maharishi’s Seven States of Consciousness. It provides a conceptual model showing how the higher states of consciousness in Maharishi’s Vedic Psychology extend beyond the developmental stages of modern psychology and meet all the criteria of advanced development.

PART III: SOCIOLOGY

A: Rehabilitation: Drugs and Alcohol

Meta-analysis of 198 Studies: the Transcendental Meditation program is Uniquely Effective for Treatment and Prevention of Drug, Alcohol, and Cigarette Abuse.


Increased Smoking Quit Rate Over a Two-Year Period.

B: Rehabilitation: Prisons—Case Histories


Almost Complete Cessation of Fights Between Inmates, Very Sharp Reduction in Irritability and Aggressiveness; Improvement in Health; Decrease in the Number of Medical Consultations—as much as 70–80%; Marked Decrease in Drug Consumption; Improvement in Sleep; Reduced National Recidivism.

C: Productivity and Quality of Life


Increased Capacity of Attention; Improved Memory of Details; Increased Ability to Carry out Orders; Increased Physical Strength; Reduced Baseline Heart Rate.


Improved Health, Decreased Disciplinary Problems and an Improved Public Image.


Reduced Anxiety, Insomnia, Fatigue, Cigarette and Hard Liquor Use; Improved Health, Employee Effectiveness, Job Satisfaction, and Job Relationships.


Improved Marital Functionality (Overall Positive Couple Agreement, Marital
Satisfaction, Personality Issues, Communication, Marital Cohesion and Marital Adaptability.)

The following papers in this section document the growth of coherence in the collective consciousness of states, nations, and the world.


Strong Replication of Original Research Methodology.


Reduced Unemployment, Traffic Fatalities, and Crime Rate (Iowa, 1979–1986).


Decreased Violent Crime Rate (Washington, D.C., June and July, 1993); Increased
A: Physiology


Based upon a wide spectrum of physiological data on Transcendental Meditation made available by previous research, the authors hypothesize that meditation is an integrated response with peripheral circulatory and metabolic changes subserving increased central nervous activity, and discuss probable objective markers of clear experience of samadhi or pure consciousness as the subjectively identifiable goal of meditation.


The author delineates the empirically measurable physiological correlates of higher states of consciousness.


The author reviews research in support of the hypothesis that regular practice of the Transcendental Meditation technique increases the flexibility of the nervous system and improves general adaptive ability.


This paper reviews four meta-analyses, which show the superiority of Maharishi’s Transcendental Meditation and TM-Sidhi program compared to other relaxation and meditation techniques in producing deep rest, decreasing anxiety, increasing self-actualization, and decreasing substance abuse (cigarettes, drugs, alcohol). It also reviews individual well-controlled studies which support the conclusion of the
meta-analyses. In addition, it provides a theoretical mechanism of the effects of Maharishi’s Transcendental Meditation and TM-Sidhi program in terms of normalization of the biochemical effects of stress.

B: Education


The author suggests that holistic development of students occurs as a result of implementing the technologies of Maharishi Mahesh Yogi’s Vedic Science such as the Transcendental Meditation and TM-Sidhi program, and teaching techniques based on the principles of Maharishi’s Vedic Science.


The author suggests that learning calculus involves three aspects: knower, known, and process of knowing. Today’s calculus reform deals admirably with the last two aspects but leaves the development of the student’s full mental capacity, the knower, largely to chance. The practice of Maharishi’s Transcendental Meditation technique at MIU develops the knower and thereby gives at least two distinct advantages: a relaxed, alert mind and an experiential framework for feeling at home with the limit process.

C: Maharishi’s Vedic Science: Physics


The author suggests that physiological growth towards immortality is possible when experience of the unified field of all the laws of nature is maintained.

D: Maharishi’s Vedic Psychology


The authors suggest that adult development to higher states of consciousness beyond the experience of waking, dreaming and sleeping results from growth of maintenance of the experience of the Self.

This paper points out that in the Bhagavad–Gita the subjective experience of transcendental or pure consciousness (“Self”) is described as having effects that have been measured through extensive scientific research on Maharishi’s Transcendental Meditation program.


This paper explains how Maharishi’s Vedic Psychology is the fulfillment of psychotherapy and reviews scientific research indicating that Maharishi’s Transcendental Meditation and TM-Sidhi program improve individual and collective physical and mental health.


The author analyzes the Bhagavad-Gita as a model case study from the Vedic literature providing knowledge of the full range of human development from ignorance to enlightenment.


The author presents a basic introduction to Transcendental Meditation and the scientific research on it.

E. Business and Industry


Promotion of Psychological Development (Ego Development, Field Independence and Intelligence).


The authors suggest that the level of development of consciousness is primary in determining continuous learning of an individual and the organization.


A review of research on the application of Maharishi’s Transcendental Meditation program in the workplace indicates: improved employee health; increased job and life satisfaction; improved job performance and productivity; increased job stability; and improved interpersonal relations. These results are discussed from a model of developing consciousness of the individual and developing corporate consciousness.
F: Rehabilitation: Drugs and Alcohol


The authors review research indicating decreased substance abuse among students, chronic users, and prison inmates.


The author focuses on the contributions of the Transcendental Meditation program to resolving broader social problems associated with addiction. He proposes that drug and alcohol abuse are symptoms of a general stress-addiction-crime epidemic in society. He then reviews impressive sociological research findings showing how societal disorder—experienced as crime, drug abuse, political conflict, and economic instability—can be substantially reduced through the cost effective programs of Transcendental Meditation and Maharishi Ayur-Veda.

G: Rehabilitation: Prisons


This paper outlines the theoretical foundations of Maharishi’s Integrated System of Rehabilitation. It shows how this theory of rehabilitation is validated by extensive scientific research and by personal experience of meditating offenders. The author suggests that this system of rehabilitation offers a solution to key problems within the field of rehabilitation, including recidivism, the measurement of rehabilitation, and the means of rehabilitation.


Benefits experienced by Meditating Wards of the Youth Authority in California.

H: Maharishi Effect: World Peace


Improved National Economy: Decreased Index of Inflation and Unemployment.

This paper is an introduction to a peace conference held at MIU, which summarizes the presentations of the conference participants and presents an overview of Maharishi’s approach to world peace.


This paper examines scientific evidence for a new technology of world peace based on the unified field of natural law and considers its practical utilization through extended field effects of consciousness.


This paper outlines the development of peace within the individual and explains how this development forms the basis of creating peace in the world.


This paper presents the Maharishi Effect as the basis for a practical program to create world peace and describes scientific research demonstrating the effectiveness of this program in generating coherence and peace on all levels of collective life.


This paper analyzes the mechanics through which the experience of transcendental consciousness creates peace in both individual and collective consciousness. The paper also emphasizes the urgency of establishing groups of world peace professionals to create peace for the world.

**Endnotes**

1. The terms in parentheses are taken from the manual of the psychological test employed in order to clarify the characteristics measured by the test.

2. In Volumes 2, 3, and 4, studies on the TM-Sidhi program appear according to their results under the appropriate headings of Parts I, II, and III of each volume.

3. The terms in brackets are taken from the manual of the psychological test employed in order to clarify the characteristics measured by the test.

4. The terms in brackets are taken from the manual of the psychological test employed in order to clarify the characteristics measured by the test.

5. Included in the research reviewed in this paper are findings which are not presented.
elsewhere in the Collected Papers, Volumes 1–4, and are therefore listed here.

4The terms in brackets are taken from the manual of the psychological test employed in order to clarify the characteristics measured by the test.

5In order to evaluate the effects of the Taste of Utopia Assembly, 17 Dec.–6 Jan. 1984, Maharishi International University, Fairfield, Iowa, U.S.A., data were gathered by the authors of this study from a) requests sent to a sample of countries on every continent; b) requests for crime statistics sent to all the world’s major cities; c) international organizations; and d) the world’s news media. Presented are the results of the analysis of the data obtained at the time of publication.