The following pages contain a complete reference list and summarize the findings of the first 503 scientific research papers on Maharishi's Transcendental Meditation and TM-Sidhi program contained in Volumes 1, 2, 3, 4, 5 and 6 of *Scientific Research on Maharishi's Transcendental Meditation and TM-Sidhi Program: Collected Papers*. The numbers before the references refer to the designated numbers of the papers as they are reprinted in the Collected Papers.

Whenever a paper has previously been published in a professional journal or other publication, the reference to that publication is given. In all other cases, details of the institutes or universities at which the research was conducted and conferences at which the results were presented are given.

**VOLUME 1**


**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.

    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.

13. JEVNING, R.; WILSON, A. F.; and SMITH, W. R. Plasma amino acids during the Transcendental Meditation technique: Comparison to sleep. Findings previously

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.

   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.

   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.

19. **BANQUET, J. P., and SAILHAN, M.** Quantified EEG spectral analysis of sleep and

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


 Improved 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.

55. TIOA, A. Increased intelligence and reduced neuroticism through the
Transcendental Meditation program. Findings previously published as
“Meditation, neuroticism and intelligence: A follow-up” in Gedrag: Tijdschrift
Increased Fluid Intelligence; Decreased Neuroticism; Decreased Somatic
Neurotic Instability.

56. ABRAMS, A. I. Paired-associate learning and recall: A pilot study of the
Transcendental Meditation program. Graduate Department of Education,
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.

58. MISKIMAN, D. E. The effect of the Transcendental Meditation program on the
organization of thinking and recall (secondary organization). Graduate
Department of Psychology, University of Alberta, Edmonton, Alberta, Canada,
Benefits for University Students: Improved Spontaneous Organization of
Memory; Improved Stabilization of Organized Memory; Improved Problem-
Solving Ability.

59. COLLIER, R. W. The effect of the Transcendental Meditation program upon
university academic attainment. Department of English as a Second Language,
College of Arts and Sciences, University of Hawaii, Honolulu, Hawaii, U.S.A.,

60. HEATON, D. P., and ORME-JOHNSON, D. W. The Transcendental Meditation
program and academic achievement. International Center for Scientific Research,

61. CORY, R., and HUFNAGEL, P. The effect of the Science of Creative Intelligence
course on high school students: A preliminary report. American Foundation for
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).


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1The terms in parentheses are taken from the manual of the psychological test employed in order to clarify the characteristics measured by the test.
Interest in Learning Transcendental Meditation Found to Be Uncorrelated with Personality Factors.

   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 Extraversion; Less Impulsiveness; Greater Personal Integration (Decreased Social Alienation and Emotional Disturbance); Lower Anxiety Level; Greater Altruism.


Increased Self-Actualization: Increased Inner-Directedness/Time Competence.


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, 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 Extraversion (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.

89. BALLOU, D. The Transcendental Meditation program at Stillwater Prison. Graduate

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.


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
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.

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.
The Transcendental Meditation Technique and Quantum Physics.

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

101. WALLACE, R. K. Neurophysiology of enlightenment. Paper presented at the 26th International Congress of Physiological Sciences, New Delhi, India, October
Neurophysiology of Enlightenment.

PART V: THE TM-SIDHI PROGRAM

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

\(^2\)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.
Changes in Regional Blood Flow Indicative of Increased Blood Flow to the Brain.

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.

112. JEVNING, R., and WILSON, A. F. Altered red cell metabolism in TM.
Fundamental Change in Cellular Metabolism: Reduced Glucose Metabolism in Red Blood Cells.

   Increased Plasma Phenylalanine Levels.

**B: Electrophysiological and Electroencephalographic Changes**

   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. 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.


   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.

\(^2\)The terms in brackets are taken from the manual of the psychological test employed in order to clarify the characteristics measured by the text.
   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.

   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 Tranquillizers 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, 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.

Resolution of Spiritual Crisis through Development of Integration of Personality: Growth of Enlightenment.

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).
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.

Decreased Drug Abuse; Decreased Use of Cigarettes; Decreased Use of Alcohol.

Decreased Drug Abuse; Decreased Use of Cigarettes; Decreased Use of Alcohol; Decreased Use of Caffeine; Decreased Need for Tranquillizers and Other Prescribed Drugs.

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**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 Admiration of One's Spouse; Greater Agreement on Conduct and Recreation.

166. **HATCHARD, G.** Influence of the Transcendental Meditation program on crime rate in suburban Cleveland. Cleveland World Plan Center, Cleveland, Ohio, U.S.A.,
1977.

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


B: Education

176. LEVINE, P. H. Transcendental Meditation and the Science of Creative Intelligence.


**C: Personality**


**D: Rehabilitation**


186. KANELLAKOS, D. P.; RIGBY, B. P.; BLOOMFIELD, H. H.; CHARLES, B. M.; CLEMENTS, G.; DAVIS, B. V.; and MEAD, G. Enlightenment for ideal rehabilitation: Expansion of consciousness as the basis of the restoration of creative intelligence. The effectiveness of the Transcendental Meditation program for rehabilitation. Paper presented at the Third International Conference on Drug


E: Quality of Life


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.

193. BAUHOFER, U. Die kreislaufphysiologischen Auswirkungen bei der
Transzendentalen Meditation. Unpublished doctoral dissertation, Faculty of Medicine, University of Würzburg, Würzburg, W. Germanv. 1978.

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.


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.


205. FARROW, J. T., and, HEBERT J. R. Breath suspension during the Transcendental Meditation technique. *Psychosomatic Medicine* 44(2):133–153, 1982. 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.

206. WERNER, O.; WALLACE, R. K.; CHARLES, B.; JANSSEN, G.; and CHALMERS, R. Endocrine balance and the TM-Sidhi program. Maharishi European Research University, Seelisberg, Switzerland, and Department of Biology, Maharishi International University, Fairfield, Iowa, U.S.A., 1982. 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.

   Electrophysiologic characteristics of respiratory suspension periods occurring

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.


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.


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.

220. Alexander, C. N., and Larimore, W. E. Distinguishing between Transcendental Meditation and sleep according to electrophysiological criteria. Department of

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 Practising 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 Program.

C: Physiological Efficiency and Stability


**D: Health**


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 Tranquillizers, Sleep Medications, Anti-Asthmatics, Anti-Hypertensives, and Drugs for Hypertension, Asthma, and Heart Disease. Increased Co-operation 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 Tranquillizers, 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.

  Reversal of Biological Aging: Younger Biological Age Compared with Control Subjects and Population Norms. Length of Time Practising 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 Tranquillizers; 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.

245. TOOMEY, M.; PENNINGTON, B.; CHALMERS, R.; and CLEMENTS, G. The practice
of the Transcendental Meditation and TM-Sidhi program reverses the physiological ageing process. MERU Research Institute, Mentmore, Buckinghamshire, England, and Department of Biology, University of York, Yorkshire, England, 1982.

Reversal of Biological Aging: Younger Biological Age Compared with Norms.
Length of Time Practising Transcendental Meditation and TM-Sidhi Program Correlated with Younger Biological Age and Younger Functional Age, and Predictive of Lower Systolic Blood Pressure and Auditory Threshold.

Reversal of Biological Ageing: Longitudinal Reduction in Biological Age;
Younger Biological Age Compared with Norms. Length of Time Practising 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-Hypertensives, Drugs for Heart Disease, Sleep Medications, Tranquillizers, Anti-Depressants, Anti-Asthmatics, Anti-Histamines, Analgesics, and Drugs for Hypertension, Asthma, and Heart Disease.

E: Motor and Perceptual Ability


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.


   More Stable Internal Frame of Reference: Greater Field Independence.

   Improved Auditory Temporal Discrimination.

Length of Time Practising 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


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 Tranquillizers.


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.

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.


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

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.
Liveliness); Increased Placidity (Increased Self-Assuredness, Increased Good Humor, Decreased Tendency to Procrastinate); Decreased Inhibition (Increases in: Naturalness, Spontaneity, Self-Sufficiency); Increased Extraversion (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.


PART IV: REVIEW PAPERS

A: Health

Reversal of Aging.


5Treatment 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 Extraversion (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

5Included 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.

   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.

   Increased Orderliness and Integration of Brain Functioning: Synchronized High Amplitude Frontal EEG Theta Activity.

   Correlation between Length of Time Practising Transcendental Meditation and EEG Alpha Coherence.

297. NIDICH, S. I.; NIDICH, R., ABRAMS, A.; ORME-JOHNSON, D.; and WALLACE, R. K. Frontal lobe functioning: EEG coherence as a predictor of highly pro-social behavior in subjects practicing the Transcendental Meditation and TM-Sidhi
C: Health


   Decreased Stuttering.


   Improved Blood Sugar Homeostasis as Measured by Oral Glucose Tolerance Test.

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
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.

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6The terms in brackets are taken from the manual of the psychological test employed in order to clarify the characteristics measured by the test.
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

315. ARON, E. N., and ARON, A. Transcendental Meditation program and marital
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.

*Findings Reflecting Growth of Coherence in Collective Consciousness on City, State, Provincial, National, and International Levels*

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


321. DILLBECK, M. C.; FOSS, A. P. O.; and ZIMMERMANN, W. J. Maharishi's Global Ideal Society Campaign: Improved quality of life in Rhode Island through the

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 Provincial Life: Decreased Motor Vehicle Fatalities; Decreased Violent Crime (Massachusetts, USA, 1979); Decreased Air Traffic Fatal Accidents (New England, USA, 1979).


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


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7 In 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.


B: Education


C: Personality


D: Rehabilitation


E: Quality of Life


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 32 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.

   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.


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**


371. GAYLORD, C.; ORME-JOHNSON, D.; WILLBANKS, M.; TRAVIS, F.; RAINFORTH, M.; and REYNOLDS, B. The effects of the Transcendental Meditation program on self-concept and EEG coherence in black college students. Abstract of paper presented at the 101st session of the Iowa Academy of Science, Storm Lake, Iowa, April 1989. Also see abstract insert in *Journal of the Iowa Academy of Science* 96(1), A31–A32. 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.


375. TRAVIS, F., and ORME-JOHNSON, D. W. EEG coherence and power during yogic flying. Abstract of a portion of the first author’s doctoral dissertation, Department of Psychology, Maharishi International University, Fairfield, Iowa, 1988. (Refer

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.

   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, Directedness, 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.


Improved Quality of National Life as Measured by a Monthly Index of Inflation and Unemployment (United States and Canada, 1979–1988).

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 the Rate of Change of Industrial Production, 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.

   The author outlines how the intelligence of the field of pure consciousness, the unified field of natural law, is expressed through the DNA and other levels of physiological functioning. The scientifically documented effects of the Transcendental Meditation program in balancing physiological functioning from the field of pure consciousness, and promoting subjective well-being, are
discussed.

   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, 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

   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: Productivity and 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**

   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.

**Scientific Research on Maharishi’s Transcendental Meditation and TM-Sidhi Programme: Collected Papers, Volume 6**

**Part I: Physiology**

*A: Metabolic, Biochemical, and Cardiovascular Changes*

*Introduction to the Section*

**431 Effects on Regional Cerebral Blood Flow of Transcendental Meditation**
Ron Jevning, Ph.D.; Rajen Anand, Ph.D.; Mark Biedebach, Ph.D.; and Gene Fernando, M.B.A.
Increased Relative Blood Flow to the Brain in Frontal and Occipital Regions; Decreased Cerebrovascular Resistance Correlated with Increased Relative Cerebral Blood Flow; Increased Galvanic Skin Resistance; Increased Galvanic Skin Resistance Correlated with Increased Relative Cerebral Blood Flow

**432 Elevated Serum Dehydroepiandrosterone Sulfate Levels in Practitioners of the Transcendental Meditation (TM) and TM-Sidhi Program**
Indications of Younger Biological Age: Increased DHEA-S Levels in Female and Older Male Practitioners of the Transcendental Meditation and TM-Sidhi Programme
433 BETA-ADRENERGIC RECEPTOR SENSITIVITY IN SUBJECTS PRACTICING TRANSCENDENTAL MEDITATION
Paul J. Mills, Ph.D.; Robert H. Schneider, M.D.; David Hill, Ph.D.; Kenneth G. Walton, Ph.D.; and R. Keith Wallace, Ph.D.
Decreased Sensitivity to Stress Hormones: Reduced Beta-Adrenergic Receptor Sensitivity

434 BETA-ADRENERGIC RECEPTOR SENSITIVITY, AUTONOMIC BALANCE AND SEROTONERGIC ACTIVITY IN PRACTITIONERS OF TRANSCENDENTAL MEDITATION
David Alan Hill, Ph.D.
Decreased Sensitivity to Stress Hormones: Reduced Beta-Adrenergic Receptor Sensitivity; More Stable Balance of the Physiology: Reduced Peripheral Serotonergic Activity Following Practice of the TM-Sidhi Programme; Length of Practice of the Transcendental Meditation Programme Correlated with Change in, and Lower Level of, Peripheral Serotonergic Activity

435 ACUTE IMMUNOREACTIVITY MODIFIED BY PSYCHOSOCIAL FACTORS: TYPE A/B BEHAVIOR, TRANSCENDENTAL MEDITATION AND LYMPHOCYTE TRANSFORMATION
Karen S. Blasdell, Ph.D.
Improved Immune Response to Stress: Faster Recovery of Baseline Immune Functioning Among Type A Subjects

436 INDOLE-MEDIATED ADAPTATION: DOES MELATONIN MEDIATE RESISTANCE TO STRESS IN HUMANS?
Kenneth G. Walton, Ph.D.; Gregory M. Brown, M.D., Ph.D.; Nirmal Pugh, B.S.; Christopher MacLean, M.S.; and Paul Gelderloos, S.Sc.D.
Lower Melatonin Turnover; Lower Levels of Melatonin Turnover Associated with Lower Stress

437 STRESS AND SEROTONIN TURNOVER IN NORMAL SUBJECTS: RELATION TO SEROTONIN DEFICIENCIES IN MENTAL DISORDERS
Kenneth G. Walton, Ph.D.; Paul Gelderloos, S.Sc.D.; Nirmal Pugh; Phil Macrae, B.S.; Phil Goddard, M.S.; Christopher MacLean, M.S.; and Debra Levitsky, M.S.
Higher Whole Body Serotonin Turnover; Less Mood Disturbance

438 MECHANISMS RELATING STRESS REDUCTION AND HEALTH: CHANGES IN NEUROENDOCRINE RESPONSES TO LABORATORY STRESS AFTER FOUR MONTHS OF TRANSCENDENTAL MEDITATION
Christopher Robin K. MacLean, Ph.D.
More Adaptive Biochemical Response to Stress: Decreased Baseline Cortisol and Decreased Overall Cortisol During Stress Session; Enhanced Cortisol Response During Stressful Challenge with Rapid Return to Baseline; Decreased TSH Response to Stress; Increased GH Response to Stress; Increased Testosterone Response to Stress. Decreased Plasma Serotonin Relative to Controls for Baseline, Average, and Response to Stress. (In
contrast to whole body serotonin metabolism, low plasma serotonin indicates decreased stress and decreased risk of high blood pressure. Low baseline cortisol and enhanced cortisol response to stress is a more stable and adaptive physiological profile.)

439 STRESS REDUCTION AND PREVENTING HYPERTENSION: PRELIMINARY SUPPORT FOR A PSYCHONEUROENDOCRINE MECHANISM
Kenneth G. Walton, Ph.D.; Nirmal D. C. Pugh, B.S.; Paul Gelderloos, S.Sc.D.; and Phil Macrae, B.S.
Endocrine Pattern Associated with Lower Stress: Lower Excretion of Cortisol and Aldosterone; Higher Excretion of Dehydroepiandrosterone Sulfate and Serotonin Metabolite 5-HIAA; Lower Excretion of Sodium, Calcium, Zinc, and Sodium/Potassium Ratio; Lower Anxiety; Less Mood Disturbance

440 CIRCADIAN RHYTHM ALTERATION BY A MENTAL TECHNIQUE FOR STRESS REDUCTION.
Jose Rafael Infante, M.D., Ph.D.; Francisco Samaniego, Ph.D.; Margarita Martinez, M.D.; Ana Roldan, M.D.; Marisa Hortas, M.D.; Eduardo Lopez, M.D.; Jose Castejon, M.D.; Rafael Poyatos, M.D.; and Fernando Peran, Ph.D.
Biochemical Indications of Decreased Stress: Lower Morning Levels of ACTH and Beta-endorphins

441 RELATIONSHIP BETWEEN SUBJECTIVE BLISS, 5-HYDROXY-3-INDOLEACETIC ACID AND THE COLLECTIVE PRACTICE OF MAHARISHI’S TRANSCENDENTAL MEDITATION AND TM-SIDHI PROGRAM
Sarah-Annelies Lölliger, Ph.D.
Increased Serotonin Turnover, Increased Subjective Experience of Bliss, and Improved Quality of Night Sleep Correlated with the Size of a Group of TM-Sidhi Programme Participants; Quality of Experiences During the Transcendental Meditation and TM-Sidhi Programme Correlated with the Size of a Group of TM-Sidhi Programme Participants

B: Electrophysiological and Electroencephalographic Changes

Introduction to the Section

442 MOBILIZATION OF THE HIDDEN RESERVES OF THE BRAIN
Nicolai N. Lyubimov, Dr. Med. Sci.
Mobilization of Hidden Reserves of the Brain: Wider Distribution of Cortical Response to Somatosensory Stimuli

443 CEREBRAL CONTROL OF AFFERENT SOMATOSENSORY PROJECTIONS
Increased Amplitude of Early Cortical and Brain Stem Responses to Somatosensory Stimuli

444 P300 UNDER CONDITIONS OF TEMPORAL UNCERTAINTY AND FILTER ATTENUATION: REDUCED LATENCY IN LONG-TERM PRACTITIONERS OF TM
Robert Cranson, Ph.D.; Phil Goddard, M.S.; David Orme-Johnson, Ph.D.; and Donald Schuster, Ph.D.

Faster Neurocognitive Processing: Reduced Latency of Auditory Brain Response (P300)

445 TRANSCENDENTAL MEDITATION AS AN INTERVENTION IN THE AGING OF NEUROCOGNITIVE FUNCTION: REDUCED AGE-RELATED DECLINES OF P300 LATENCIES IN ELDERLY PRACTITIONERS
Phil H. Goddard, Ph. D.
Preservation of Neurocognitive Processing Speed with Age: Faster Latency of Visual Evoked Potentials (P300)

446 ENDOGENOUS EVOKE POTENTIALS IN SUBJECTS PRACTICING TRANSCENDENTAL MEDITATION
Snjezana Miskov, M.D., Ph.D.
Increased Efficiency and Decreased Age-Related Deterioration of Cognitive Information Processing as Measured by Auditory Event-Related Potentials: Increased Amplitude and Decreased Latency of Brain Potentials (P300) Correlated with Length of Time Practicing Transcendental Meditation; Greater Amplitude of Response Prior to Transcendental Meditation in Comparison to Controls; Shorter Latency of Response Following Transcendental Meditation in Comparison to Before; Shorter Latency of Response Following Transcendental Meditation in Comparison to Controls

447 P300 LATENCY AND AMPLITUDE DURING EYES-CLOSED REST AND TRANSCENDENTAL MEDITATION PRACTICE
Frederick Travis, Ph.D.; and Snjezana Miskov, M.D., Ph.D.
Improved Efficiency of Information Transfer in the Brain: Shorter Latencies of Auditory Evoked Potentials (P300) Following Transcendental Meditation

448 EEG ANALYSIS DURING MEDITATION: A LITERATURE REVIEW AND EXPERIMENTAL STUDY
Dr. med. Wulf Splittstoesser
EEG Indications of Restful Alertness: Low or High Amplitude Theta Activity Alternating with Basic Alpha Activity; Isolated Delta Waves with Occasional Overlap by Fast Frequencies; High Amplitude Theta Bursts; Increased Intrahemispheric Coherence in the Alpha and Theta Frequency Bands

449 EYES OPEN AND TM EEG PATTERNS AFTER ONE AND EIGHT YEARS OF TM PRACTICE
Frederick Travis, Ph.D.
Higher Eyes-Open Frontal-Central EEG Coherence in Long-Term Participants in the Transcendental Meditation Programme; Increased Frontal Alpha EEG Activity and Periodic Theta-Alpha Bursts During the Practice of Transcendental Meditation for both Short-Term and Long-Term Participants

450 THE DYNAMIC CHARACTERISTICS OF MODIFIED CONSCIOUSNESS DURING AND AFTER TRANSCENDENTAL MEDITATION
EEG Indications of Restful Alertness: Increased Stability of Alpha Activity, Increased Beta Power, and Reduced Slow-Wave Delta and Theta Power During Transcendental Meditation; Persistence of EEG Changes Following Transcendental Meditation

**451 COMPARATIVE ANALYSIS OF ALPHA RHYTHM CONTENT IN SPONTANEOUS EEG ACTIVITY AMONG SUBJECTS PRACTISING THE TRANSCENDENTAL MEDITATION TECHNIQUE**

EEG Indications of Restful Alertness: High Frontal EEG Alpha Power During Transcendental Meditation; Stabilization of Frontal EEG Alpha Power Outside the Practice of Transcendental Meditation

**452 EEG RELATIVE ALPHA POWER DURING YOGIC FLYING**

David W. Orme-Johnson, Ph.D.; and Paul Gelderloos, S.Sc.D.
Stabilized Restful Alertness: EEG Alpha Power During TM-Sidhi Yogic Flying

**453 EEG COHERENCE AND POWER DURING YOGIC FLYING**

Frederick T. Travis, Ph.D.; and David W. Orme-Johnson, Ph.D.
Increased EEG Coherence and Power Immediately before the Body Lifted up during TM-Sidhi Yogic Flying

**454 AN EMPIRICAL TEST OF MAHARISHI’S JUNCTION POINT MODEL OF STATES OF CONSCIOUSNESS**

Frederick T. Travis, Ph.D.
Indication of Pure Consciousness at the Transition between Waking and Sleeping: EEG Alpha Activity in the Frontal Cortex; Increased Duration of Frontal Alpha Activity During Transcendental Meditation

**455 THE JUNCTION POINT MODEL: A FIELD MODEL OF WAKING, SLEEPING, AND DREAMING, RELATING DREAM WITNESSING, THE WAKING/SLEEPING TRANSITION, AND TRANSCENDENTAL MEDITATION IN TERMS OF A COMMON PSYCHOPHYSIOLOGIC STATE**

Frederick Travis, Ph.D.
Indication of Pure Consciousness at the Transition Between Waking, Sleeping, and Dreaming: Increased EEG Theta/Alpha Power

**456 ELECTROPHYSIOLOGICAL CORRELATES OF HIGHER STATES OF CONSCIOUSNESS DURING SLEEP**

Experience of Pure Consciousness During Sleep: Increased EEG Theta/Alpha Power During Deep Sleep; Decreased EMG Activity During Deep Sleep; Increased REM Density During REM Sleep; More Frequent Reports of Higher States of Consciousness
C: Health

*Introduction to the Section*

**457 TRANSCENDENTAL MEDITATION, MINDFULNESS, AND LONGEVITY: AN EXPERIMENTAL STUDY WITH THE ELDERLY.**


Benefits for the Elderly Demonstrating Reversal of Ageing: 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 (Verbal Task); Increased Learning Ability (Paired Associate Learning Task); Improvements in Self-Reported Measures of Behavioural Flexibility and Ageing (Greater Ability to Cope with Inconvenience, Reduced Feelings of Being Old); Greater Sense of Well-Being (Feeling Better and More Relaxed After Transcendental Meditation; Feeling Better During Transcendental Meditation; High Interest in Transcendental Meditation; and High Ratings of the Value of Transcendental Meditation)

**458 A RANDOMIZED CONTROLLED TRIAL OF STRESS REDUCTION ON CARDIOVASCULAR AND ALL-CAUSE MORTALITY IN THE ELDERLY: RESULTS OF 8 YEAR AND 15 YEAR FOLLOW-UPS**

*Charles Alexander, Ph.D.; Vernon Barnes, Ph.D.; Robert Schneider, M.D.; Ellen Langer, Ph.D.; Ronnie Newman, M.Ed.; Howard Chandler, Ph.D.; John Davies, Ph.D.; and Maxwell Rainforth, M.S., M.A.*

Benefits for the Elderly: Increased Longevity (Higher Survival Rate); Higher Survival Rate Among Those with Cardiovascular Mortality

**459 A RANDOMIZED CONTROLLED TRIAL OF STRESS REDUCTION FOR HYPERTENSION IN OLDER AFRICAN AMERICANS**

*Robert H. Schneider, M.D; Frank Staggers, M.D.; Charles N. Alexander, Ph.D.; William Sheppard, Ph.D.; Maxwell Rainforth, M.S., M.A.; Kofi Kondwani, M.S.; Sandra Smith, Ph.D.; and Carolyn Gaylord King, Ph.D.*

More Ideal Levels of Blood Pressure in Hypertensive Subjects: Reduction of High Systolic and Diastolic Blood Pressure

**460 TRIAL OF STRESS REDUCTION FOR HYPERTENSION IN OLDER AFRICAN AMERICANS: II. SEX AND RISK SUBGROUP ANALYSIS**

*Charles N. Alexander, Ph.D.; Robert H. Schneider, M.D.; Frank Staggers, M.D.; William Sheppard, Ph.D.; B. Mawiyah Clayborne, Ph.D.; Maxwell Rainforth, M.S., M.A.; John Salerno, Ph.D.; Kofi Kondwani, M.S.; Sandra Smith, Ph.D; Kenneth G. Walton, Ph.D.; and Brent Egan, M.D.*

More Ideal Levels of Blood Pressure in Hypertensive Subjects who Learned the Transcendental Meditation Programme: Reduction of High Systolic and Diastolic Blood Pressure Found for both Men and Women, and both High and Low Psychosocial Stress Subjects; Reduction of High Systolic and Diastolic Blood Pressure Irrespective of Score on Five Other Measures of Risk for High Blood Pressure—Obesity, Alcohol Use,
Physical Inactivity, Dietary Sodium-Potassium Intake, and Index of All Risk Factors Combined

461 THE EFFECT OF TRANSCENDENTAL MEDITATION ON AMBULATORY BLOOD PRESSURE AND CARDIOVASCULAR REACTIVITY
Stig R. Wenneberg, M.S.; Robert H. Schneider, M.D.; Christopher R. K. MacLean, M.S.; Debra K. Levitsky, M.S.; Kenneth G. Walton, Ph.D.; Joseph Mandarino, Ph.D.; and Rafiq Waziri, M.D.
More Ideal Levels of Blood Pressure in Normotensive Subjects: Decreased Mean Diastolic Ambulatory Blood Pressure; Maintenance of Blood Pressure Reactivity.

462 COST-EFFECTIVE HYPERTENSION MANAGEMENT: COMPARISON OF DRUG THERAPIES WITH AN ALTERNATIVE PROGRAM
Robert E. Herron, Ph.D.; Robert H. Schneider, M.D.; Joseph V. Mandarino, Ph.D.; Charles N. Alexander, Ph.D.; and Kenneth Walton, Ph.D.
Greater Cost-Effectiveness for Hypertension Management through Transcendental Meditation Programme in Comparison to Drug Therapies

463 USEFULNESS OF THE TRANSCENDENTAL MEDITATION PROGRAM IN THE TREATMENT OF PATIENTS WITH CORONARY ARTERY DISEASE
John W. Zamarra, M.D.; Robert H. Schneider, M.D.; Italo Besseghini, M.D.; Donald K. Robinson, M.S.; and John W. Salerno, Ph.D.
Improved Cardiovascular Functioning in Patients with Coronary Artery Disease: Improved Exercise Tolerance (Increased Exercise Duration; Increased Maximal Workload; Greater Delay of Onset of ST Depression; Greater Reduction of Rate-Pressure Product During Exercise)

464 TRANSCENDENTAL MEDITATION AND THREE CASES OF MIGRAINE
H. David Lovell-Smith, B.A, M.B., Ch.B.
Reduced Frequency and Severity of Migraine Headache

465 MONITORING BEHAVIOURAL STRESS CONTROL USING A CRANIOMANDIBULAR INDEX
R. M. Shaw, B.D.Sc., M.Sc.; and D. M. Dettmar, B.D.Sc.
Reduction of craniomandibular stress

466 EFFECTS OF TRANSCENDENTAL MEDITATION (TM) ON THE MENTAL HEALTH OF INDUSTRIAL WORKERS
Takashi Haratani, Ph.D.; and Takemitsu Hemmi, M.D., Ph.D.
Improvements in General Physical and Mental Well-Being in Industrial Workers: Decreased Physical Complaints; Decreased Impulsive Tendency; Reduced Emotional Instability; Decreased Neurotic Tendency; Decreased Anxiety

467 EFFECTS OF TRANSCENDENTAL MEDITATION (TM) ON THE HEALTH BEHAVIOUR OF INDUSTRIAL WORKERS
Takashi Haratani, Ph.D.; and Takemitsu Hemmi, M.D., Ph.D.
Improved Sleep and Decreased Smoking in Industrial Workers: Decreased Time to Fall Asleep; Reduced Waking During the Night; Decreased Percentage of People Smoking; Fewer Cigarettes Smoked per Day

**468 THE ROLE OF THE TRANSCENDENTAL MEDITATION TECHNIQUE IN PROMOTING SMOKING CESSATION: A LONGITUDINAL STUDY**  
*Ann Royer, Ph.D.*  
Decreased Cigarette Consumption; Increased Smoking Quit Rate Over a Two-Year Period

**469 THE IMPACT OF TRANSCENDENTAL MEDITATION PRACTICE ON MEDICAL EXPENDITURES**  
*Robert E. Herron, Ph.D.*  
Decreased Payments for Physicians’ Services; Greatest Savings for Elderly and High Medical Cost People

**470 THE IMPACT OF THE TRANSCENDENTAL MEDITATION PROGRAM ON GOVERNMENT PAYMENTS TO PHYSICIANS IN QUEBEC**  
Decreased Payments for Physicians’ Services

**PART II: PSYCHOLOGY**

**A: Intelligence, Learning, and Academic Performance**

**471 TRANSCENDENTAL MEDITATION AND IMPROVED PERFORMANCE ON INTELLIGENCE-RELATED MEASURES: A LONGITUDINAL STUDY**  
Increased General Intelligence: Improved Intelligence Test Performance; Improvement in Reaction Time Measures Correlated with General Intelligence (Faster Choice Reaction Time, Lower Standard Deviation of Choice Reaction Time); Faster Simple Reaction Time

**472 VEDIC SCIENCE BASED EDUCATION AND NONVERBAL INTELLIGENCE: A PRELIMINARY LONGITUDINAL STUDY IN CAMBODIA**  
*Lee C. Fergusson, Ph.D.; Anna J. Bonshek, M.A.; and Gildas Le Masson, M.A.*  
Increased Nonverbal Intelligence

**473 TESTING AND DEVELOPING HOLISTIC INTELLIGENCE IN CHINESE CULTURE WITH MAHARISHI’S VEDIC PSYCHOLOGY: THREE EXPERIMENTAL REPLICATIONS USING TRANSCENDENTAL MEDITATION**  
*So Kam-Tim, Ph.D.*
Increased Creativity; Increased Fluid Intelligence; Decreased Inspection Time (Increased Speed of Information Processing); Increased Field Independence; Increased Constructive Thinking; Decreased Anxiety.

474 COGNITIVE AND SELF DEVELOPMENT AMONG URBAN CHILDREN PARTICIPATING IN AN AFTER-SCHOOL EDUCATIONAL PROGRAM
Michael C. Dillbeck, Ph.D.; Horus I. Msemaje, M.S.; B. Mawiyah Clayborne, Ph.D.; and Susan L. Dillbeck, Ph.D.
Increased Analytical Ability; Increased General Intellectual Performance; Improved Self Concept

FIELD INDEPENDENCE AND ART ACHIEVEMENT IN MEDITATING AND NONMEDITATING COLLEGE STUDENTS
Lee C. Fergusson, Ph.D.
Higher Level of Field Independence; Field Independence Correlated with Artistic Ability and College Academic Performance

FIELD INDEPENDENCE, TRANSCENDENTAL MEDITATION AND ACHIEVEMENT IN COLLEGE ART: A REEXAMINATION
Lee C. Fergusson, Ph.D.
Higher Level of Field Independence; Correlation of Field Independence with Artistic Ability, Self-Perceived Artistic Competence, and College Academic Performance

B: Development of Personality

TRANSCENDENTAL MEDITATION, SELF-ACTUALIZATION, AND PSYCHOLOGICAL HEALTH: A CONCEPTUAL OVERVIEW AND STATISTICAL META–ANALYSIS
Charles N. Alexander, Ph.D.; Maxwell V. Rainforth, M.S., M.A.; and Paul Gelderloos, S.Sc.D.
Increased Self-Actualization through Transcendental Meditation in Contrast to Other Procedures as Demonstrated by Meta-Analysis; Improvement in the Measured Components of Self-Actualization: Increased Time Competence (Ability to Live in the Present; Ability to Connect Past, Present, and Future Meaningfully); Increased Inner-Directedness (Independence; Self-Supportiveness); Increased Self-Actualizing Value (Holding Values of Self-Actualizing People); Increased Existentiality (Flexibility in Application of Values); Increased Spontaneity; Increased Self-Regard; Increased Self-Acceptance; Increased Nature of Man Constructive (Sees Man as Essentially Good); Increased Synergy (Sees Opposites of Life as Meaningfully Related); Increased Acceptance of Feelings; Increased Capacity for Intimate Contact (Warm Interpersonal Relationships); Increased Emotional Maturity; Increased Integrative Perspective on Self and World; Increased Resilient Sense of Self

TRANSCENDENTAL MEDITATION AND AWAKENING WISDOM: A 10-YEAR LONGITUDINAL STUDY OF SELF DEVELOPMENT
Howard M. Chandler, Ph.D.
Growth of Wisdom: Increased Ego Development; Increased Principled Moral Reasoning; Increased Motivation for Warm Interpersonal Relationships

479 TRANSCENDENTAL MEDITATION, ADAPTATION MECHANISMS AND VALUATIONS
Henry H. B. Ahlström, Ph.D.
Increased Orientation Towards Positive Values; Increased Psychological Health

480 PERSONALITY AND HEALTH CHARACTERISTICS OF CAMBODIAN UNDERGRADUATES: A CASE FOR STUDENT DEVELOPMENT
Lee C. Fergusson, Ph.D.; Anna J. Bonshek, M.A.; and Jean-Michel Boudigues, M.A.
Improved Mental and Physical Health: Decreased State Anxiety; Decreased Trait Anxiety; Decreased Depression; Increased Self-Esteem; Improved General Health

PART III: SOCIOLOGY

A: Rehabilitation

481 TREATING AND PREVENTING ALCOHOL, NICOTINE, AND DRUG ABUSE THROUGH TRANSCENDENTAL MEDITATION: A REVIEW AND STATISTICAL META-ANALYSIS
Charles N. Alexander, Ph.D.; Pat Robinson, Ph.D., O.T.R.; and Maxwell Rainforth, M.S., M.A.
Results of Integrative Meta-Analysis: Significantly Greater Reduction in Use of Illegal Drugs, Alcohol, and Cigarettes than Programmes of Relaxation, Prevention, or Treatment; Abstinence from Illegal Drugs, Alcohol, and Cigarettes Maintained or Increased over Long Term (Relapse Prevention); Improved Psychological Health (Reduced Negative Qualities, Reduced Anxiety, Improved Positive Qualities) Among Those with Substance Abuse Problems in Comparison to Controls

482 CASE STUDY OF THE TRANSCENDENTAL MEDITATION PROGRAMME IN THE NATIONAL PRISON SYSTEM OF SENEGAL
Jean-Michel Boudigues, M.A.
Case Study Benefits for Inmates: Sharp Reduction in Negativity, Irritability and Aggressiveness; Improved Relations Between Inmates; Improvement in Health; Marked Decrease in Drug Consumption; Improvement in Sleep; Greater Confidence and Joyfulness. Case Study Benefits for Staff: Greater Self-Confidence; Greater Concern for Inmates; Greater Self-Control; Greater Conscientiousness; Improved health; Decreased Absenteeism and Lateness. Case Study Benefits for Prison: Almost Complete Cessation of Fights Between Inmates; Sharp Decrease in the Number of Medical Consultations; Marked Decrease in Rule Violations by Inmates and Staff; Fewer Escapes. Case Study Benefits for the Nation: Reduced National Recidivism; Increased and More Balanced Rainfall and Increased Harvests

B: Productivity and Quality of Life
483 EFFECTS OF THE TRANSCENDENTAL MEDITATION PROGRAM ON STRESS REDUCTION, HEALTH, AND EMPLOYEE DEVELOPMENT: A PROSPECTIVE STUDY IN TWO OCCUPATIONAL SETTINGS
Charles N. Alexander, Ph.D.; Gerald C. Swanson, Ph.D.; Maxwell V. Rainforth, M.S., M.A.; Thomas W. Carlisle, M.S.; Christopher C. Todd, M.B.A.; and Robert M. Oates, Jr., M.A.
Increased Employee Effectiveness; Increased Job Satisfaction; Improved Personal and Work Relationships; Reduced Job Worry and Tension; Reduced Trait Anxiety; Decreased Insomnia and Decreased Fatigue; Reduced Cigarette and Hard Liquor Use; Improved Health; Greater Calm (Lower Skin Conductance) During Task Performance; Improvement on Common Factors Underlying each of these Measures (Occupational Coherence, Physiological Settledness, Satisfaction with Professional and Personal Life)

484 EFFECTS OF THE TRANSCENDENTAL MEDITATION PROGRAM ON PSYCHOLOGICAL, PHYSIOLOGICAL, BEHAVIORAL, AND ORGANIZATIONAL CONSEQUENCES OF STRESS IN MANAGERS AND EXECUTIVES
David L. De Armond, Ph.D.
Benefits for Managers: Increased Contribution to the Organization; Improved Mental Health; Increased Vitality; More Healthy Behaviours; Decreased Perceived Stress; Decreased Physical Complaints; Decreased Serum Cholesterol

485 INTRODUCING IN A MILITARY ACADEMY THE TRANSCENDENTAL MEDITATION PROGRAM FOR PREVENTION OF STRESS
Dra. Maria de Fatima Campos Belham
Benefits for Military Cadets: Increased Capacity of Attention; Improved Memory of Details; Increased Effectiveness in Executing Orders; Improved Emotional Performance; Increased Physical Strength (Push-ups); Reduced Resting Heart Rate. Benefits for Officers: Increased Concentration of Attention; Improved Memory of Details; Improved Emotional Performance

486 IMPLEMENTING THE TRANSCENDENTAL MEDITATION PROGRAMME IN THE BRAZILIAN MILITARY POLICE FORCES: A CASE STUDY
Jose Luis Alvarez Roset and Markus Schuler
Benefits for Police Officers: Decreased Disciplinary Problems; Decreased Doctor Visits; Improved Community Relations. Benefits for Police Officer Trainees: Better Physical Well-Being; Greater Relaxation; Less Worry and Tension; Greater Capacity for Study; Improved Relationships; Greater Respect for Country and Organizations; Enhancement of Military Education; Decreased Disciplinary Problems; Decreased Doctor Visits.

487 RELATIONSHIP BETWEEN PARTICIPATION IN TRANSCENDENTAL MEDITATION AND THE FUNCTIONALITY OF MARRIAGE
Vicki Jean Broome, M.Ed.(Psych), M.S.C.I.
The Following Papers in This Section Document the Growth of Coherence in the Collective Consciousness of States, Nations and the World.

488 THE MAHARISHI EFFECT: A MODEL FOR SOCIAL IMPROVEMENT. TIME SERIES ANALYSIS OF A PHASE TRANSITION TO REDUCED CRIME IN MERSEYSIDE METROPOLITAN AREA.
Guy D. Hatchard, M.A.; Ashley J. Deans, Ph.D.; Kenneth L. Cavanaugh, Ph.D.; and David W. Orme-Johnson, Ph.D.
Improved Quality of City Life: Decreased Crime Rate (Merseyside, England, 1988–1991)

489 EFFECTS OF GROUP PRACTICE OF THE TRANSCENDENTAL MEDITATION PROGRAM ON PREVENTING VIOLENT CRIME IN WASHINGTON, DC: RESULTS OF THE NATIONAL DEMONSTRATION PROJECT, JUNE–JULY 1993
Improved Quality of City and National Life as Measured by Decreased Violent Crime Rate in the National Capital (Washington, DC, USA, June and July, 1993)

490 IMPROVED QUALITY OF LIFE IN IOWA THROUGH THE MAHARISHI EFFECT
Dori Lou Reeks, Ph.D.
Improved Quality of State Life: Reduced Unemployment; Decreased Traffic Fatalities; Decreased Crime Rate; Increase of a Quality of Life Index Including All Three Variables (Iowa, USA, 1979–1986)

491 WHAT DOES THE MAHARISHI TECHNOLOGY OF THE UNIFIED FIELD MEAN FOR SOCIAL WORK? A STUDY IN AUSTRALIA
Sandy Gowing Price, B.S.W.(Hons.).
Improved Quality of National Life: Reduced Fatal Traffic Accidents; Reduced Unemployment; Increased Value of Stock Market Index (Australia, January 1983)

492 TEST OF A FIELD THEORY OF CONSCIOUSNESS AND SOCIAL CHANGE: TIME SERIES ANALYSIS OF PARTICIPATION IN THE TM-SIDHI PROGRAM AND REDUCTION OF VIOLENT DEATH IN THE U.S.
Michael C. Dillbeck, Ph.D.
Improved Quality of National Life: Improvement on a Weekly Index Including Motor Vehicle Fatalities, Homicide, and Suicide (United States, 1982–1985)

493 TIME SERIES ANALYSIS OF IMPROVED QUALITY OF LIFE IN CANADA: SOCIAL CHANGE, COLLECTIVE CONSCIOUSNESS, AND THE TM-SIDHI PROGRAM
Panayotis D. Assimakis, Ph.D.; and Michael C. Dillbeck, Ph.D.
Improved Quality of National Life: Improvements on a Weekly Index Including Motor Vehicle Fatalities, Homicide, and Suicide (Canada, 1983–1985); Improvements on a
Monthly Index Including Motor Vehicle Fatalities, Homicide, Suicide, Cigarette Consumption, and Worker-Days Lost in Strikes (Canada, 1972–1986)

494 IMPACT ASSESSMENT ANALYSIS OF BEHAVIORAL QUALITY OF LIFE INDICES: EFFECTS OF GROUP PRACTICE OF THE TRANSCENDENTAL MEDITATION AND TM-SIDHI PROGRAM
Michael C. Dillbeck, Ph.D.; and Maxwell V. Rainforth, M.S., M.A.
Improved Quality of National Life: Improvements Controlling for Economic Changes on a Monthly Index Including Motor Vehicle Fatalities, Homicide, Suicide, Deaths Due to Accidents (other than Motor Vehicle), Notifiable Diseases, Alcohol Consumption, Cigarette Consumption (United States, 1970–1986); Improvements Controlling for Economic Changes on a Monthly Index Including Motor Vehicle Fatalities, Homicide, Suicide, Cigarette Consumption (Canada, 1972–1986)

Lt. Gen. Tobias Dai
Case Study of Improved Quality of National Life as Measured by Decreased Crime, Decreased Auto Fatalities, Greater Economic Growth, and Increased Rainfall (Mozambique, 1993)

496 THE EFFECTS OF THE MAHARISHI TECHNOLOGY OF THE UNIFIED FIELD: REPLY TO A METHODOLOGICAL CRITIQUE
David W. Orme-Johnson, Ph.D.; Charles N. Alexander, Ph.D.; and John L. Davies, Ph.D.
Strong Replication of Original Research Methodology: Decreased International Conflict (Israel and Lebanon, August–September 1983)

Paul Gelderloos, S.Sc.D.; Kenneth L. Cavanaugh, Ph.D.; and John L. Davies, Ph.D.
Improved USA–USSR Relations: Improved USA Statements and Actions Towards the USSR and Improved USSR Statements and Actions Towards the USA (USA and USSR, 1979–1986).

498 U.S.–SOVIET RELATIONS AND THE MAHARISHI EFFECT: A TIME SERIES ANALYSIS
Kenneth L. Cavanaugh, Ph.D.; and Paul Gelderloos, S.Sc.D.
Improved USSR–USA Relations: Improved USSR Statements and Actions Towards the USA, Controlling for Behaviour of USA, Seasonality, and Gorbachov Administration (USSR, 1979–1986).

PART IV: THEORETICAL AND REVIEW PAPERS
A: Physiology and Health

499 THE PHYSIOLOGY OF MEDITATION: A REVIEW. A WAKEFUL HYPOMETABOLIC INTEGRATED RESPONSE
Ron Jevning, Ph.D.; R. Keith Wallace, Ph.D.; and Mark Biedebach, Ph.D.
The authors propose that practice of the Transcendental Meditation Technique creates an integrated physiological response with peripheral circulatory and metabolic changes subserving increased central nervous activity, and review data from previous research on physiological changes associated with the Transcendental Meditation Programme.

500 THE PHYSIOLOGY OF HIGHER STATES OF CONSCIOUSNESS
Robert Keith Wallace, Ph.D.
The author reviews current research on the Transcendental Meditation Programme delineating physiological correlates of the development of higher states of consciousness.

501 SERUM HORMONAL CONCENTRATIONS FOLLOWING TRANSCENDENTAL MEDITATION—POTENTIAL ROLE OF GAMMA AMINOBUTYRIC ACID
Alan N. Elias, M.D.; and Archie F. Wilson, M.D., Ph.D.
The authors review research on the hormonal changes associated with the Transcendental Meditation Technique and attempt to understand these changes in light of the known effects of the neurotransmitter gamma aminobutyric acid (GABA) on hormonal secretion and release, proposing that one of the mechanisms by which the Transcendental Meditation Technique produces relaxation is by enhancing the effects of an endogenous neurotransmitter.

502 TRANSCENDENTAL MEDITATION AS A TECHNIQUE TO INCREASE NEURAL, COGNITIVE, AND BEHAVIORAL PLASTICITY
David W. Orme-Johnson, Ph.D.
The author reviews research indicating that regular practice of the Transcendental Meditation Technique increases the flexibility of the nervous system and improves general adaptive ability.

503 A NEUROENDOCRINE MECHANISM FOR THE REDUCTION OF DRUG USE AND ADDICTIONS BY TRANSCENDENTAL MEDITATION
Kenneth G. Walton, Ph.D.; and Debra Levitsky, M.S.
This paper outlines a model of the neurochemical and endocrine processes associated with chronic stress and their contribution to the development of drug addiction; it also reviews research on the physiological effects of Transcendental Meditation in light of this model, indicating mechanisms of how this technique creates physiological balance and thereby promotes freedom from addictive behaviours.

504 IN SEARCH OF AN OPTIMAL BEHAVIORAL TREATMENT FOR HYPERTENSION: A REVIEW AND FOCUS ON TRANSCENDENTAL MEDITATION
Robert H. Schneider, M.D.; Charles N. Alexander, Ph.D.; and Robert Keith Wallace, Ph.D.

This paper reviews the body of research papers on the benefits of the Transcendental Meditation Programme for reduction of hypertension, focussing in detail on two controlled clinical trials showing decreased hypertension among the elderly. The authors examine the Transcendental Meditation Technique in light of requirements for an optimal behavioural treatment of hypertension.

505 THE EFFECTS OF TRANSCENDENTAL MEDITATION COMPARED TO OTHER METHODS OF RELAXATION AND MEDITATION IN REDUCING RISK FACTORS, MORBIDITY, AND MORTALITY
Charles N. Alexander, Ph.D.; Pat Robinson, Ph.D., O.T.R.; David W. Orme-Johnson, Ph.D.; Robert H. Schneider, M.D.; and Kenneth G. Walton, Ph.D.

This paper reviews four meta-analyses that show the superiority of the Transcendental Meditation Programme compared to other techniques in producing deep rest, decreasing anxiety, increasing self-actualization, and decreasing substance abuse (cigarettes, drugs, alcohol). It also reviews individual well-controlled studies on the beneficial effects of this technique on hypertension, mortality, medical care, and medical expenses, and discusses physiological mechanisms for these effects.

B: Education

506 THE IMPACT OF MAHARISHI’S VEDIC SCIENCE BASED EDUCATION IN HIGHER EDUCATION: THE EXAMPLE OF MAHARISHI INTERNATIONAL UNIVERSITY
Christopher H. Jones, Ed.D.

The author reviews research findings demonstrating holistic development among the students of Maharishi International University in the United States (now Maharishi University of Management), and examines the source of these effects in the unique system of Maharishi’s Vedic Science Based Education offered by the University.

507 PREPARING THE STUDENT TO SUCCEED AT CALCULUS
M. Anne Dow, Ph.D.

The author describes how current reforms in teaching of calculus address the object of knowledge and the process of knowing, but leave the development of the student’s full mental capacity, the knower, largely to chance. The practice of the Transcendental Meditation Programme develops the knower and thereby gives at least two distinct advantages: a relaxed, alert mind and an intuitive experiential framework for feeling at home with the limit process.

C: Psychology

508 HIGHER STATES OF CONSCIOUSNESS: MAHARISHI MAHESH YOGI’S VEDIC PSYCHOLOGY OF HUMAN DEVELOPMENT
Michael C. Dillbeck, Ph.D.; and Charles N. Alexander, Ph.D.
The authors outline the development of higher states of consciousness from Maharishi’s Vedic Psychology in light of relevant research, and propose that human development to these higher states beyond the experience of waking, dreaming and sleeping results from experience of pure consciousness, the Self.

509 ADVANCED HUMAN DEVELOPMENT IN THE VEDIC PSYCHOLOGY OF MAHARISHI MAHESH YOGI: THEORY AND RESEARCH
Charles N. Alexander, Ph.D.; Dennis P. Heaton, Ed.D.; and Howard M. Chandler, Ph.D.
The authors describe the development of higher states of consciousness as brought to light by Maharishi Mahesh Yogi in his Vedic Psychology, and contrast this to contemporary themes of cognitive or self development. The authors then review research demonstrating uniquely high scores on self-development among advanced participants in Maharishi’s Transcendental Meditation and TM-Sidhi Programme.

510 MAHARISHI’S VEDIC PSYCHOLOGY: ALLEVIATE SUFFERING BY ENLIVENING BLISS—RECONNECT THE PARTIAL VALUES OF LIFE WITH THE WHOLENESS OF LIFE
Paul Gelderloos, S.Sc.D.
This paper examines how Maharishi’s Vedic Psychology fulfils the practical goals of psychology and reviews scientific research indicating that Maharishi’s Transcendental Meditation and TM-Sidhi Programme improves the physical and mental health of the individual and creates an influence of harmony in society.

511 THE BHAGAVAD-GITA: A CASE STUDY IN MAHARISHI’S VEDIC PSYCHOLOGY
Michael C. Dillbeck, Ph.D.
The paper considers the Bhagavad-Gita as a model case study from the Vedic Literature, providing knowledge of the full range of human development to higher states of consciousness; this knowledge of development of consciousness is systematically brought to light in Maharishi’s Vedic Psychology and supported by research on the Transcendental Meditation and TM-Sidhi Programme.

512 THE CONCEPT OF SELF IN THE BHAGAVAD-GITA AND IN THE VEDIC PSYCHOLOGY OF MAHARISHI MAHESH YOGI: A FURTHER NOTE ON TESTABILITY
Michael C. Dillbeck, Ph.D.
This paper points out that the subjective experience of Transcendental Consciousness (‘Self’) described in the Bhagavad-Gita has effects that have been measured through extensive scientific research on Maharishi’s Transcendental Meditation Programme.

513 TRANSCENDENTAL MEDITATION
Charles N. Alexander, Ph.D.
This paper presents an introduction to the Transcendental Meditation Programme and major scientific research findings on its effects for the individual and society.

D: Rehabilitation
514 EFFECTIVENESS OF THE TRANSCENDENTAL MEDITATION PROGRAM IN PREVENTING AND TREATING SUBSTANCE MISUSE: A REVIEW
The authors review research studies demonstrating decreased substance abuse among the general population, among participants in treatment programmes, and among prison inmates through practice of the Transcendental Meditation Programme.

515 THE TRANSCENDENTAL MEDITATION PROGRAM FOR PREVENTION OF ALCOHOL AND DRUG ABUSE AMONG JUVENILES AT RISK
Michael C. Dillbeck, Ph.D.
The author reviews research indicating that the Transcendental Meditation Programme reduces risk factors for substance abuse and increases factors that protect against abuse; the paper also reviews research demonstrating effective reduction of alcohol and drug use through this programme.

516 TRANSCENDENTAL MEDITATION AS AN EPIDEMIOLOGICAL APPROACH TO DRUG AND ALCOHOL ABUSE: THEORY, RESEARCH, AND FINANCIAL IMPACT EVALUATION
David W. Orme-Johnson, Ph.D.
This paper focuses on the contributions of the Transcendental Meditation Programme to resolving the broad social problems associated with addictions. The author proposes that drug and alcohol abuse are symptoms of a general stress-addiction-crime epidemic in society. The paper then reviews sociological research findings showing how societal disorder—experienced as crime, drug abuse, political conflict, and economic instability—can be substantially and cost-effectively reduced through the group practice of the Transcendental Meditation and TM-Sidhi Programme.

517 THE THEORETICAL FOUNDATIONS AND PRACTICAL VALIDATION OF MAHARISHI’S INTEGRATED SYSTEM OF REHABILITATION
Michael S. King, B.Juris., LL.B.(Hons.)
This paper outlines the theoretical foundations of Maharishi’s Integrated System of Rehabilitation. It shows how this system of rehabilitation is validated by extensive scientific research and by personal experience of offenders instructed in the Transcendental Meditation Programme. The author concludes that this system of rehabilitation offers a solution to key problems within the field of rehabilitation, including recidivism, the method of rehabilitation, and measurement of rehabilitation.

E. Business

518 THE INTELLIGENCE MODEL OF ORGANIZATIONAL EFFECTIVENESS: ITS IMPLICATIONS FOR ENHANCED PRODUCTIVITY
Robert E. Herron, M.B.A.; and William W. Graff, M.A., M.B.A.
The authors review research on the importance of intelligence in job performance, and on the effect of the Transcendental Meditation Programme in increasing intelligence, in improving job performance and related variables in the business setting, and in improving the quality of the collective consciousness of the whole society.
TRANSFORMING HUMAN RESOURCES FOR THE TWENTY-FIRST CENTURY
Jane Schmidt-Wilk, M.B.A.; and Dennis P. Heaton, Ed.D.
The authors review research indicating that the Transcendental Meditation Programme simultaneously promotes creativity, health, and teamwork—three human resource qualities that are vital for success in the future business environment.

DEVELOPING CONSCIOUSNESS IN ORGANIZATIONS: THE TRANSCENDENTAL MEDITATION PROGRAM IN BUSINESS.
Jane Schmidt-Wilk, M.B.A.; Charles N. Alexander, Ph.D.; and Gerald C. Swanson, Ph.D.
A review of research and case studies on the application of Maharishi’s Transcendental Meditation Programme in the workplace indicates improved employee health, increased job satisfaction, improved job performance and productivity, and improved organizational performance and climate. These results are discussed in terms of the development of consciousness of the individual and the organization.

F. Quality of Life

IMPROVING THE NATIONAL ECONOMY THROUGH ALLIANCE WITH NATURE’S GOVERNMENT: EFFECTS OF THE GROUP PRACTICE OF MAHARISHI’S TRANSCENDENTAL MEDITATION AND TM-SIDHI PROGRAM
Kenneth L. Cavanaugh, Ph.D.; Kurleigh D. King, Ph.D.; and Birney D. Titus, Ph.D.
This paper reviews a series of studies that document improvements in the national economies of the U.S. and Canada, as indicated by an index of decreased inflation and decreased unemployment, when the number of participants in Maharishi’s Transcendental Meditation and TM-Sidhi Programme exceeded the square root of one percent of their national populations.

PEACEFUL BODY, PEACEFUL MIND, PEACEFUL WORLD
Charles N. Alexander, Ph.D.
This paper reviews scientific research studies demonstrating the development of peace within the individual through Maharishi’s Transcendental Meditation and TM-Sidhi Programme, and explains how this development forms the basis of creating peace in the world.

THEORY AND RESEARCH ON CONFLICT RESOLUTION THROUGH THE MAHARISHI EFFECT
David W. Orme-Johnson, Ph.D.
This paper presents the Maharishi Effect as the practical basis for creating world peace, and describes scientific research demonstrating the effectiveness of the Maharishi Effect in generating coherence and peace on all levels of society.

ACHIEVING WORLD PEACE THROUGH A NEW SCIENCE AND TECHNOLOGY
John S. Hagelin, Ph.D.
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 a field effect of consciousness generated by large groups of experts practising the Transcendental Meditation and TM-Sidhi Programme.