

## Research

Research has taken place nearly exclusively at Universities or at private research institutes in the United States. We have summarised a total of 84 papers published between 1980 and 2000 on the following topics:

- 1) Psychophysiological Effects**
- 2) Biological Effects**
- 3) Treatment of Physical Dysfunctions and Psychological Disorders**
  - 3.1 Anxiety
  - 3.2 Children with Autism
  - 3.3 Pre-menstrual Syndrome
  - 3.4 Chronic Pain, Rheumatoid Arthritis
  - 3.5 Other
- 4) Treatment of Habit Disorders**
  - 4.1 Alcohol Consumption
  - 4.2 Eating
  - 4.3 Smoking
  - 4.4 Stress Management
- 5) Enhancement of Creativity**
  - 5.1 Sports
  - 5.2 Other
- 6) Sensory Restriction and Hypnotisability**

## More recent research

From 2006 to 2008 some research was made in Sweden to investigate how floating can aid stress management and prevent burn-out:

Bood, S. Å., Sundequist, U., Kjellgren, A., Nordström, G., & Norlander, T. (2007). Effects of REST (Restricted Environmental Stimulation technique) on Stress related muscle pain: Are 33 flotation sessions more effective than 12 sessions? *Social Behaviour and Personality*, 35, 143-156.

Åsenlöf, K., Olsson, S., Bood, S.Å., & Norlander, T. (in press). Case studies on fibromyalgia and burn-out depression using psychotherapy in combination with flotation-REST: Personality development and increased well-being. *Imagination, Cognition and Personality*.

Landström, A., Bood, S.Å., Kjellgren, A., & Norlander, T. (2007). Treating stress related pain in a clinical sample with flotation-REST: A further report on improvements on pain assessed by the Pain Area Inventory (PAI). *Social Behaviour and Personality*, 35, 1279-1280.

Edebol, H., Bood, S. Å., & Norlander, T. (2008). Case studies on chronic whiplash associated disorders and their treatment using flotation-REST (Restricted Environmental Stimulation technique). *Qualitative Health Research*, 18, 480-488.

Kjellgren, A., Lydén, F., & Norlander, T. (2008). Sensory isolation in flotation tank: altered states of consciousness and effects on well-being. *The Qualitative Report*, 13, 636-656.

## 1. Psychophysiological Effects

Effects Ballard E. (1993). REST in the Treatment of Persistent Psychophysiological Insomnia. Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives. pp. 187-203. New York: Springer-Verlag New York Inc.

Crawford H. Psychological Comparisons of REST and Hypnosis: Implications for Future Research. Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives. pp. 175-186. New York: Springer-Verlag New York Inc.

Fine T., Mills D. & Turner J. Jr. (1993). Differential Effects of Wet and Dry Flotation REST on EEG Frequency and Amplitude. Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives. pp. 205-213. New York: Springer-Verlag New York Inc.

Foster D.S., Ph.D. (1997). EEG and Subjective Correlates of Alpha Frequency Binaural Beats Stimulation Combined with Alpha Biofeedback. 6th International REST Conference. San Francisco.

McGrady A. (1990). Psychophysiological Regulation of Blood Pressure. Restricted Environmental Stimulation: Research and Commentary. pp. 29-35. Toledo, Ohio: Medical College of Ohio Press.

Schwartz G. (1982). Integrating Modern Physics, Psychobiology and REST: an Amusing Synthesis Derived from Systems Theory. 2nd International Conference on REST. pp. 22-48. Toledo, Ohio: IRIS Publications.

Taylor T. (1985). The effects of Flotation Restricted Environmental Stimulation Therapy on Learning: Subjective Evaluation and EEG Measurements. First International Conference on REST and Self-Regulation. pp. 76-85. Toledo, Ohio: IRIS Publications.

## 2. Biological Effects

Barabasz M., O'Neill M. & Scoggin G. (1990). The Physiological Panic Button: New Data. Restricted Environmental Stimulation: Research and Commentary. pp. 112-119. Toledo, Ohio: Medical College of Ohio Press.

Budzynski T.H. (1990). Hemispheric Asymmetry and REST. Restricted Environmental Stimulation: Theoretical and Empirical Developments in Flotation REST. pp. 2-21. New York: Springer-Verlag New York Inc.

Ewy G., Sershon P., Freundlich T. (1990). The Presence or Absence of Light in the REST Experience: Effects on Plasma Cortisol, Blood Pressure and Mood. Restricted Environmental Stimulation: Research and Commentary. pp. 120-133. Toledo, Ohio: Medical College of Ohio Press.

Fine T., Mills D. & Turner J. Jr. (1993). Differential Effects of Wet and Dry Flotation REST on EEG Frequency and Amplitude. Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives. pp. 205-213. New York: Springer-Verlag New York Inc.

Fine T. & Turner J.W. (1985). The Use of Restricted Environmental Stimulation Therapy (REST) in the Treatment of Essential Hypertension. First International Conference on REST and Self-Regulation. pp. 136-143. Toledo, Ohio: IRIS Publications.

Fine T. & Turner J.W. (1987). The Effect of flotation REST on EMG Biofeedback and Plasma Cortisol. 2nd International Conference on REST. pp. 148-155. Toledo, Ohio: IRIS Publications.

Francis W.D. & Stanley J.M. (1985). The Effects of Restricted Environmental Stimulation on Physiological and Cognitive Indices. First International Conference on REST and Self-Regulation. pp. 40-49. Toledo, Ohio: IRIS Publications.

Malowitz R., Tortora T. & Lehmann C.A. (1990). Effects of Floating in a Saturated Epsom Salts Solution Disinfected with Bromine on the Aerobic Microbial Flora of the Skin. *Restricted Environmental Stimulation: Research and Commentary*. pp. 139-150. Toledo, Ohio: Medical College of Ohio Press.

### **3. Treatment of Physical Dysfunctions and Psychological Disorders**

#### 3.1 Anxiety

O'Toole P. & Barabasz M. (1997). Effects of Rational Emotive Therapy and REST on Social Anxiety. 6th International REST Conference. San Francisco.

Pudvah M.B. & Rzewnicki R. (1990). Six Months in the Tank: The Long-Term Effects of Flotation Isolation on State Anxiety, Hostility, and Depression. *Restricted Environmental Stimulation: Research and Commentary*. pp. 79-85. Toledo, Ohio: Medical College of Ohio Press.

#### 3.2 Children with Autism

Harrison J. & Barabasz A. (1993). REST as a Treatment for Children with Autism. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 269-280. New York: Springer-Verlag New York Inc.

Suedfeld P. & Schwartz G. (1980). Restricted Environmental Stimulation Therapy (REST) as a Treatment for Autistic Children. *Journal of Developmental and Behavioral Pediatrics*. Vol.4, #3, pp. 196-201. William & Wilkins Co.

#### 3.3 Pre-menstrual syndrome

Goldstein D.D. & Jessen W.E. (1990). Flotation Effect on Premenstrual Syndrome. *Restricted Environmental Stimulation: Research and Commentary*. pp. 260-266. Toledo, Ohio: Medical College of Ohio Press.

Jessen W. (1993). The Effects of Consecutive Floats and Their Timing on Premenstrual Syndrome. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 281-288. New York: Springer-Verlag New York Inc.

#### 3.4 Chronic Pain, Rheumatoid Arthritis

Borrie R. (1997). The Benefits of Flotation REST (Restricted Environmental Stimulation Therapy) in a Pain Management Program. 6th International REST Conference. San Francisco.

McCormick B.A., Shafransky D.R., Fine T.H. & Turner J.W. Jr. (1997). Effects of Flotation REST on Plasma Cortisol in Rheumatoid Arthritis. 6th International REST Conference. San Francisco.

Mereday C., Lehmann C. & Borrie R. (1990). Flotation For The Management of Rheumatoid Arthritis. *Restricted Environmental Stimulation: Research and Commentary*. pp. 255-259. Toledo, Ohio: Medical College of Ohio Press.

Shafransky D.R., McCormick B.A., Fine T.H. & Turner J. Jr. (1997). *Restricted Environmental Stimulation Therapy*

(REST) on Serological Markers of Inflammation in Rheumatoid Arthritis. 6th International REST Conference. San Francisco.

Turner J. Jr., Deleon A., Gibson C. & Fine T.H. (1993). Effects of Flotation REST on Range Motion, Grip Strength and Pain in Rheumatoid Arthritis. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 297-306. New York: Springer-Verlag New York Inc.

### 3.5 Other

Borrie R., Dana J., Perry S., & Friedman M. (1993). Flotation REST, Physical Therapy and Psychological Intervention in the Treatment of Physical Disabilities. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 289-296. New York: Springer-Verlag New York Inc.

Cahn H.A. (1985). Sensory Isolation used with Cognition Modification Training to Restore Medically Declared Unfit Persons to Duty and Reduce Absenteeism in City of Phoenix Maintenance Workers. *First International Conference on REST and Self-Regulation*. pp. 167-178. Toledo, Ohio: IRIS Publications.

Grunberg N. E. (1990). Potential Applications of Restricted Environmental Stimulus Therapy in Behavioral Health. *Restricted Environmental Stimulation: Research and Commentary*. pp. 36-50. Toledo, Ohio: Medical College of Ohio Press.

Ramirez C.E., Suedfeld P., Remick R.A. & Fleming J.A.E. (1990). Potential Beneficial Effect of REST on Patients with Electroconvulsive Therapy. *Restricted Environmental Stimulation: Research and Commentary*. pp. 188-195. Toledo, Ohio: Medical College of Ohio Press.

Rzewnicki R., Wallbaum A.B.C., Steel H. & Suedfeld P. (1990). REST for Muscle Contraction Headaches; A Comparison of Two REST Environments Combined with Progressive Muscle Relaxation Training. *Restricted Environmental Stimulation: Research and Commentary*. pp. 245-254. Toledo, Ohio: Medical College of Ohio Press.

Dr. Suchurbruck, Dr. Berman & Tappich J. (1997). Treatment of Psychosomatic Illness Through Mental Training and Flotation in Oxygenated Magnesium Sulfate Saturated Baths. 6th International REST Conference. San Francisco.

Tikalsky F.D.(1990). Restricted Environmental Stimulation, Relaxation Therapy, Social Support and Mental Imagery as a Treatment Regimen in Breast Cancer. *Restricted Environmental Stimulation: Research and Commentary*. pp. 267-271. Toledo, Ohio: Medical College of Ohio Press.

## 4. Treatment of Habit Disorders

### 4.1 Alcohol Consumption

Adams H. (1988). REST Arousability and the Nature of Alcohol and Substance Abuse. *Journal of substance Abuse Treatment*. Vol.5, pp. 77-81. USA.

Barabasz M., Barabasz A. & Dyer R. (1993). Chamber REST Reduces Alcohol Consumption: 3, 6, 12, and 24 Hour Sessions. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 163-173. New York: Springer-Verlag New York Inc.

Cooper G., Adams H. & Scott J. (1988). REST and Alcohol Consumption. *Journal of substance Abuse Treatment*. Vol.5, pp. 59. USA.

David B. (1997). A Pilot Test of REST as a Relapse Prevention Treatment for Alcohol and Drug Abusers. 6th International REST Conference. San Francisco.

DiRito D. (1993). Motivational Factors in Alcohol Consumption: Extending Hull's Model. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 157-162. New York: Springer-Verlag New York Inc.

#### 4.2 Eating

Barabasz M. (1993). REST: A Key Facilitator in the Treatment of Eating Disorders. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 121-126. New York: Springer-Verlag New York Inc.

Borrie R.A. (1985). Restricted Environmental Stimulation Therapy used in Weight Reduction. *First International Conference on REST and Self-Regulation*. pp. 144-151. Toledo, Ohio: IRIS Publications.

Dyer R., Barabasz A. & Barabasz M. (1993). Twenty-Four Hours of Chamber REST Produces Specific Food Aversions in Obese Females. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 127-144. New York: Springer-Verlag New York Inc.

#### 4.3 Smoking

Barabasz M. & Barabasz A. (1993). Treatment of Trichotillomania and Smoking with Hypnosis and REST. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 145-156. New York: Springer-Verlag New York Inc.

Fine T. & Bruno J. (1985). Floatation REST and Smoking Cessation: A preliminary Report, *Health and Clinical Psychology*. North Holland: Elsevier Science Publishers B.V.

Ramirez C. (1985). Restricted Environmental Stimulation Techniques in Smoking Cessation in a Latin American Country. *First International Conference on REST and Self-Regulation*. pp. 152-166. Toledo, Ohio: IRIS Publications.

#### 4.4 Stress Management

Barabasz A., Barabasz M., Dyer R. & Rather N. (1993). Effects of Chamber REST, Flotation REST and Relaxation on Transient Mood State. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 113-120. New York: Springer-Verlag New York Inc.

Brownfield C. (1993). Slow REST or Fast Drugs: Meditation or Medication? *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 101-111. New York: Springer-Verlag New York Inc.

Ewy G., Sershon P., Freundlich T. (1990). The Presence or Absence of Light in the REST Experience: Effects on Plasma Cortisol, Blood Pressure and Mood. *Restricted Environmental Stimulation: Research and Commentary*. pp. 120-133. Toledo, Ohio: Medical College of Ohio Press.

Fine T. & Turner J.W. (1985). The Use of Restricted Environmental Stimulation Therapy (REST) in the Treatment of Essential Hypertension. *First International Conference on REST and Self-Regulation*. pp. 136-143. Toledo, Ohio: IRIS Publications.

Helmreich N.E. (1990). The Critical Role of Personality and Organizational Factors as Determinants of Reactions

to Restricted and Stressful Environments. *Restricted Environmental Stimulation: Research and Commentary*. pp. 51-61. Toledo, Ohio: Medical College of Ohio Press.

Jacobs, Heilbronner & Stanely. (1985). *The Effects of Short Term Floatation REST on Relaxation*. First International Conference on REST and Self-Regulation. pp. 86-102. Toledo, Ohio: IRIS Publications.

Jacobs G.D., Kemp J.C., Keane K.M. & Belden A.D. (1985). *A Preliminary Clinical Outcome Study on a Hospital Based Stress Management Program Utilizing Flotation REST Biofeedback*. First International Conference on REST and Self-Regulation. pp. 179-185. Toledo, Ohio: IRIS Publications.

Kuola G. M., Kemp J., Keane K.M. & Belden A., (1984). *Replication of a Clinical Outcome Study on a Hospital-based Stress Management and Behavioral Medicine Program Utilizing Floatation REST (Restricted Environmental Stimulation Technique) and Biofeedback*. 2nd International Conference on REST. pp. 127-135. Toledo, Ohio: IRIS Publications.

Dr. Schürbrock, (1996). *Treatment of Psychosomatic Illnesses Through Mental Training and Floatations in Oxygenated Magnesium Sulfate Saturated Baths, For Instance in the Treatment of Chronic Relapsing Skin Diseases (Psoriasis, Neurodermatitis)* 6th International REST Conference, San Francisco.

Dr. Schürbrock, (1996). *Zur Adjuvanten Therapie Chronisch Rezidivierter Hauterkrankung (Psoriasis-Vulgaris, Neurodermitis) im Magnesium-Sulfat Schwebewasser-Tank in Kombination mit UV-Bestrahlung im Therapiezentrum »Haus Ebersberg«.*

Wickramasekera I. (1993). *A Model of the Common »Active Ingredient« in Stress Reduction Techniques*. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 59-74. New York: Springer-Verlag New York Inc.

## **5. Enhancement of Creativity**

Baker D.A.(1987). *The Effects of REST and Hemispheric Synchronization Compared to the Effects of REST and Guided Imagery on the Enhancement of Creativity in Problem-Solving*. 2nd International Conference on REST. pp. 122-126. Toledo, Ohio: IRIS Publications.

Metcalfe J. & Suedfeld P. (1990). *Enhancing the Creativity of Psychologists Through Flotation REST*. *Restricted Environmental Stimulation: Research and Commentary*. pp. 204-212. Toledo, Ohio: Medical College of Ohio Press.

Vartarian O.A. (1997). *The Effects of Flotation REST on Musical Creativity*. 6th International REST Conference. San Francisco.

### **5.1 Sports**

Baker D.A. (1990). *The Use of REST in the Enhancement of Sports Performance- Tennis*. *Restricted Environmental Stimulation: Research and Commentary*. pp. 181-187. Toledo, Ohio: Medical College of Ohio Press.

Bond J. (1997). *»To float or not to float«... is that the question? How to maximise your use of the Sport Psychology float tanks.*

McAleney P. & Barabasz A. (1993). *Effects of Flotation REST and Visual Imagery on Athletic Performance: Tennis*. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 79-86. New York: Springer-Verlag New York Inc.

Richardson S. (1997). Enhancing Rowing Ergometer Performance Through Flotation REST. 6th International REST Conference. San Francisco.

Stanley J., Mahoney M. & Reppert S. (1982). REST and the Enhancement of Sports Performance: A Panel Presentation and Discussion. 2nd International Conference on REST. pp. 168-183. Toledo, Ohio: IRIS Publications.

Wagaman J. & Barabasz A. (1993). Flotation REST and Imagery in the Improvement of Collegiate Athletic Performance: Basketball. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 87-92. New York: Springer-Verlag New York Inc.

## 5.2 Other

Atkinson R. (1993). Short-Term Exposure to REST: Enhancement Performance on a Signal-Detection Task. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 93-100. New York: Springer-Verlag New York Inc.

Barabasz M. & Barabasz A. (1997). REST Effects on Human Performance. 6th International REST Conference. San Francisco.

Melchiori L.G. & Barabasz A.F. (1990). Effects of Flotation REST on Simulated Instrument Flight Performance. *Restricted Environmental Stimulation: Research and Commentary*. pp. 196-203. Toledo, Ohio: Medical College of Ohio Press.

O'Leary D.S. & Heilbronner R.L. (1985). Flotation Rest and Information Processing: A Reaction Time Study. *First International Conference on REST and Self-Regulation*. pp. 50-61. Toledo, Ohio: IRIS Publications.

## 6. Sensory Restriction and Hypnotizability

Barabasz A.F. (1993). Neo-Dissociation Accounts for Pain Relief and Hypnotic Susceptibility Findings: Flotation REST Elicits Hypnosis. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 41-52. New York: Springer-Verlag New York Inc.

Barabasz M. & Barabasz A.F. (1990). Effects of Chamber REST on Hypnotizability and Chronic Pain. *Restricted Environmental Stimulation: Research and Commentary*. pp. 213-228. Toledo, Ohio: Medical College of Ohio Press.

Barabasz M. & Barabasz A. (1993). Treatment of Trichotillomania and Smoking with Hypnosis and REST. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 145-155. New York: Springer-Verlag New York Inc.

Borrie R.A. (1990). Development of the Guided Float: The Use of Ericksonian Hypnosis in the Flotation REST. *Restricted Environmental Stimulation: Research and Commentary*. pp. 158-173. Toledo, Ohio: Medical College of Ohio Press.

Crawford H. Psychological Comparisons of REST and Hypnosis: Implications for Future Research. *Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives*. pp. 175-186. New York: Springer-Verlag New York Inc.

Kaplan G.M. & Barabasz A.F. (1990). Enhancing Hypnotizability: Differential Effects of Flotation Restricted Environmental Stimulation Technique (REST) and Progressive Muscle Relaxation. *Restricted Environmental Stimulation: Research and Commentary*. pp. 229-244. Toledo, Ohio: Medical College of Ohio Press.

Migaly P. (1993). REST and Hypnotic Phenomena: Some Similarities Observed in European Case Studies. *Clinical*



and Experimental Restricted Environmental Stimulation: New Developments and Perspectives. pp. 53-58. New York: Springer-Verlag New York Inc.

Raikov V. & Barabasz M. (1993). Age regression Phenomena. Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives. pp. 75-78. New York: Springer-Verlag New York Inc.

Wickramasekera I. (1985). The Common Therapeutic Elements and Procedural Components in Self-Hypnosis and Other Stress Reduction Techniques. First International Conference on REST and Self-Regulation. pp. 206-219. Toledo, Ohio: IRIS Publications.

Wickramasekera I. (1993). A Model of the Common »Active Ingredient« in Stress Reduction Techniques. Clinical and Experimental Restricted Environmental Stimulation: New Developments and Perspectives. pp. 59-74. New York: Springer-Verlag New York Inc.