NOTE: This bibliography is a work in progress and is far from complete. See Michael Murphy and Steven Donovan, *The Physiological and Psychological Effects of Meditation: A Review of Contemporary Research with a Comprehensive Bibliography 1931-1996*, 2d ed. (Sausalito, Calif.: The Institute of Noetic Sciences, 1997; URL: http://www.noetic.org/research/medbiblio/index.htm) for a comprehensive bibliography of meditation research prior to 1997. Only part of the citations in the Murphy and Donovan bibliography have thus far been recorded in the present bibliography. The present bibliography also cites many resources in addition to research.

**A brief review of research and controversies in EEG biofeedback and meditation.** *Journal of Transpersonal Psychology*, 1987, 19(2).


From the publisher: “In one comprehensive volume, *Meditation & Its Practices* illuminates the principles of the Yoga and Vedanta meditation traditions, the meaning of meditation, its goal of Self-Knowledge, the methods by which concentration is developed, and the ways of achieving self-control . . .”

**Aftanas, L. I., and S. A. Golocheikine.** Human anterior and frontal midline theta and lower alpha reflect emotionally positive state and internalized attention: high-resolution EEG investigation of meditation. *Neuroscience Letter*, 7 Sep 2001, 310(1):57-60. Author email: aftanas@iph.ma.nsc.ru. PMID: 11524157.

EEG spectral power and coherence estimates in the individually defined delta, theta, alpha-1, alpha-2, and alpha-3 bands were used to identify and characterize brain regions involved in meditative states, in which focused internalized attention gives rise to emotionally positive "blissful" experience. Blissful state was accompanied by increased anterior frontal and midline theta synchronization as well as enhanced theta long-distant connectivity between prefrontal and posterior association cortex with distinct "center of gravity" in the left prefrontal region (AF3 site). Subjective scores of emotional experience significantly correlated with theta, whereas scores of internalized attention with both theta and alpha lower synchronization. Our results propose selective associations of theta and alpha oscillating networks activity with states of internalized attention and positive emotional experience.

Abstract: We used non-linear analysis to investigate the dynamical properties underlying the EEG in the model of Sahaja Yoga meditation. Non-linear dimensional complexity (DCx) estimates, indicating complexity of neuronal computations, were analyzed in 20 experienced meditators during rest and meditation using 62-channel EEG. When compared to rest, the meditation was accompanied by a focused decrease of DCx estimates over midline frontal and central regions. By contrast, additionally computed linear measures exhibited the opposite direction of changes: power in the theta-1 (4-6 Hz), theta-2 (6-8 Hz) and alpha-1 (8-10 Hz) frequency bands was increased over these regions. The DCx estimates negatively correlated with theta-2 and alpha-1 and positively with beta-3 (22-30 Hz) band power. It is suggested that meditative experience, characterized by less complex dynamics of the EEG, involves 'switching off' irrelevant networks for the maintenance of focused internalized attention and inhibition of inappropriate information. Overall, the results point to the idea that dynamically changing inner experience during meditation is better indexed by a combination of non-linear and linear EEG variables.


Findings: Benefits for the elderly: Increased longevity. Increased cognitive and perceptual flexibility. Increased behavioural flexibility. Increased learning ability. Improved mental health and sense of well-being. More ideal levels of blood pressure.


Findings: Benefits for the elderly demonstrating reversal of aging: increased longevity (higher survival rate). Reduction of systolic blood pressure to more ideal levels. Improved mental health (improvements on nurses’ mental health ratings). Increased cognitive flexibility (less premature cognitive commitment, increased learning ability on associate learning and greater perceptual flexibility). Increased word fluency. Improvements in self-reported measures of behavioral flexibility and ageing (greater ability to cope with inconvenience, reduced feelings of being old, less impatience with others). Greater sense of well-being (feeling better during the TM program, high interest
in the TM Programme and high ratings of the value of the TM program. Feeling better and more relaxed after the TM program).


Andresen says about this book: “A substantial body of evidence suggests that regular meditation has a strong relationship to positive health outcomes, self-transcendence, and overall well-being.”

As reviewed by David C. Darrington at Amazon.com: “This book is a reprint of the November/December 2000 issue of the *Journal of Consciousness Studies*. I read it looking for something that I will continue to wait for, a science that goes beyond descriptions and speculation regarding the nature of religious experience. Are those who say cognitive psychology and atheistic assumptions are enough to explain religion correct in that? I don’t believe so. Religious experience is data waiting for a way of analysis that would convince a skeptic of that. Maybe the wait will be beyond what anyone can wait. This book does not provide anything new along these lines, but it is a good summary of some areas.”
“The difficulty is not for lack of effort. Jensine Andresen does a good job summarizing 50 years of research on physical effects of meditation. The autonomic effects are well documented, including how different meditation styles and different degrees of experience can induce relaxation or activation. Brain imaging studies are described, though it remains to be seen if findings noted there are actually adding anything to the meaning of autonomic effects measured peripherally. The greatest obstacle to doing more with this is not anything subjective about the experience. It’s a matter of how limited neuroscience remains to answering certain questions. The simplest theory of how meditation lowers blood pressure is easy to state in terms of reducing input to the sympathetic nervous system, but what are the details? What inputs are there as we go about our lives in an ordinary state of consciousness? What aspect of meditation is necessary to change that? What aspects make the effect optimal? How might the benefit of lower blood pressure be extended further into states of normal consciousness? What is actually going on here? This book describes how crude studies relevant to such questions have been done across many types of meditation, but it is neuroscience itself that is still lacking techniques to connect cause and effect in a way that such studies can say anything more than, ‘There’s something there.’ Maybe more experience with functional brain imaging will change that, but it remains to be seen.

“Much of what else is described in this book suffers from the same problem, only more so, because the effects being addressed by other authors include perception, cognition, and motivation, transcendent or otherwise, where it’s even harder to talk about brain mechanisms in a detailed way. Other authors are also less systematic than Andresen and prone to speculative models of experience and consciousness that don’t necessarily have anything to do with natural or spiritual principles.

“This book may be useful to those who are interested in learning more about the phenomenology of religious experience. It does provide multiple approaches to choose from. Other authors who are notably conscientious about their subjects include Phillip H. Wiebe writing on Christic visions and James H. Austin on the neuroanatomy and neurophysiology of consciousness. Don’t expect any useful conclusions. Until neuroscience becomes even more detailed or experiments such as those regarding the power of prayer in medicine become more impressive, this sort of thing is still going to be a matter of preaching to the choir.”


Abstract: This study explores the physiological correlates of a highly practiced Kundalini Yoga meditator. Thoracic and abdominal breathing patterns, heart rate (HR), occipital parietal electroencephalograph (EEG), skin conductance level (SCL), and blood volume pulse (BVP) were monitored during prebaseline, meditation, and postbaseline periods. Visual analyses of the data showed a decrease in respiration rate during the meditation from a mean of 11 breaths/min for the pre- and 13 breaths/min for the postbaseline to a mean of 5 breaths/min during the meditation, with a predominance of abdominal/diaphragmatic breathing. There was also more alpha EEG activity during the
meditation (M = 1.71 microV) compared to the pre- (M = .47 microV) and postbaseline (M = .78 microV) periods, and an increase in theta EEG activity immediately following the meditation (M = .62 microV) compared to the pre-baseline and meditative periods (each with M = .26 microV). These findings suggest that a shift in breathing patterns may contribute to the development of alpha EEG, and those patterns need to be investigated further.


Ask Mr. Yogi. Answers the question: “Can I meditate in a chair, or must I learn how to meditate sitting on the floor with legs crossed?” Article available online: http://www.anandamarga.org/askmryogi1.htm.


Auriol, Bernard M. Approche neuro-physiologique de la méditation. Paper presented at Entretiens de Toulouse (E.N.A.C.), consacrés à l’équilibre Corps-Esprit, organisés par l’Association Zen Midi-Pyrénées. [In French.]

__________. Les effets psychologiques de la Méditation Transcendantale: l’interview par J. R. Nadal. France Culture, Sep 1977. [In French.]


Abstract: We need to clarify at least four aspects of selfhood if we are to reach a better understanding of consciousness in general, and of its alternate states.

First, how did we develop our self-centred psychophysiology? Second, can the four
familiar lobes of the brain alone serve, if only as preliminary landmarks of convenience, to help understand the functions of our many self-referent networks? Third, what could cause one’s former sense of self to vanish from the mental field during an extraordinary state of consciousness? Fourth, when a person’s physical and psychic self do drop off briefly, how has conscious experience then been transformed? In particular, what happens to that subject’s personal sense of time?

Our many-sided self arose in widely distributed brain networks. Since infancy, these self-oriented circuits have been over-conditioned by limbic biases. Selfhood then seems to have evolved along lines suggesting at least in shorthand the operations of a kind of ‘I–Me–Mine’ complex.

But what happens when this egocentric triad briefly dissolves? Novel states of consciousness emerge. Two personally-observed states are discussed: (1) insight-wisdom (kensho-satori); (2) internal absorption. How do these two states differ phenomenologically? The physiological processes briefly suggested here emphasize shifts in deeper systems, and pivotal roles for thalamo-cortical interactions in the front and back of the brain.


Contents: Starting to point toward Zen, Meditating, Neurologizing, Exploring states of consciousness, Quickening, Turning in: The absorptions, Turning out: The awakenings, Being and beyond: To the stage of ongoing enlightenment


Abstract: Interventions based on training in mindfulness skills are becoming increasingly popular. Mindfulness involves intentionally bringing one's attention to the internal and external experiences occurring in the present moment, and is often taught through a variety of meditation exercises. This review summarizes conceptual approaches to mindfulness and empirical research on the utility of mindfulness-based interventions. Meta-analytic techniques were incorporated to facilitate quantification of findings and comparison across studies. Although the current empirical literature includes many methodological flaws, findings suggest that mindfulness-based interventions may be helpful in the treatment of several disorders. Methodologically sound investigations are recommended in order to clarify the utility of these interventions.


Bailey, Vyn. Patanjali’s Meditation Yoga.


A primer for beginning meditators. “The author spent ten years in a Korean monastery studying Zen Buddhism and then worked for fifteen years as a housecleaner in England. The challenge of taking meditation out of the meditation hall and making it an organic part of her life led Batchelor to look at a variety of practices that can serve ordinary people in the modern world” (from a review in *Inquiring Mind*, Fall 2002, p. 34).


Abstract: Primary objective: To examine the potential efficacy of a mindfulness-based stress reduction approach to improve quality of life in individuals who have suffered traumatic brain injuries. Research design: Pre-post design with drop-outs as controls. Methods and procedures: We recruited individuals with mild to moderate brain injuries, at least 1 year post-injury. We measured their quality of life, psychological status, and
function. Results of 10 participants who completed the programme were compared to three drop-outs with complete data. Experimental intervention: The intervention was delivered in 12-weekly group sessions. The intervention relied on insight meditation, breathing exercises, guided visualization, and group discussion. We aimed to encourage a new way of thinking about disability and life to bring a sense of acceptance, allowing participants to move beyond limiting beliefs. Main outcomes and results: The treatment group mean quality of life (SF-36) improved by 15.40 (SD = 9.08) compared to - 1.67 (SD = 16.65; p = 0.036) for controls. Improvements on the cognitive-affective domain of the Beck Depression Inventory II (BDI-II) were reported (p = 0.029), while changes in the overall BDI-II (p = 0.059) and the Positive Symptom Distress Inventory of the SCL-90R (p = 0.054) approached statistical significance. Conclusions: The intervention was simple, and improved quality of life after other treatment avenues for these participants were exhausted.


On the author’s first meditation class, recommended to her because of her stress level.


Abstract: To examine the extent to which advanced meditative practices might alter body metabolism and the electroencephalogram (EEG), we investigated three Tibetan Buddhist monks living in the Rumtek monastery in Sikkim, India. In a study carried out in February 1988, we found that during the practice of several different meditative practices, resting metabolism (VO2) could be both raised (up to 61%) and lowered (down to 64%). The reduction from rest is the largest ever reported. On the EEG, marked asymmetry in alpha and beta activity between the hemispheres and increased beta activity were present. From these three case reports, we conclude that advanced meditative practices may yield different alterations in metabolism (there are also forms of meditation that increase metabolism) and that the decreases in metabolism can be striking.


Provides “an in-depth look at the theory and practice of Hindu meditation, including an overview of Yoga psychology.”


__________. *Problem Thoughts in Meditation* audiotape. Rishikesh, India: Sadhana Mandir Trust.


From a review at Amazon.com: “The book consists of a brief introduction and twenty short chapters. Chapter I sets forth the rationale for meditation. The focus of the next chapter is the teacher-student relationship in the practice of meditation. Chapter III
outlines Patanjali’s eight-step discipline to yoga and Chapters IV-X elaborate on these steps. Obstacles to and hazards in meditation are discussed in Chapters XI and XII, respectively. The well-known, but widely misunderstood, concept of kundalini power is the subject of Chapter XIII. The Sankhya theory of creation is briefly examined in the next chapter. A lucid discussion of Samadhi in its multiple forms constitutes Chapter XV. The post-Samadhi state is explained in the next chapter. The three chapters that follow discuss Japa, spiritual progress, and stress relief, in that order. Concluding remarks are offered in Chapter XX.”


**Bhole, M. V.** Gastric tone as influenced by mental states and meditation. *Yoga-Mimamsa*, 1983, 22(1&2):54-58.


Abstract: There has been substantial interest in mindfulness as an approach to reduce cognitive vulnerability to stress and emotional distress in recent years. However, thus far mindfulness has not been defined operationally. This paper describes the results of recent meetings held to establish a consensus on mindfulness and to develop conjointly a testable operational definition. We propose a two-component model of mindfulness and specify each component in terms of specific behaviors, experiential manifestations, and implicated psychological processes. We then address issues regarding temporal stability and situational specificity and speculate on the conceptual and operational distinctiveness of mindfulness. We conclude this paper by discussing implications for instrument development and briefly describing our own approach to measurement.


From a review at Amazon.com: “. . . their approach is refreshingly non-sectarian, teaching the practitioner the practical aspects (what really matters!) of the various cultivation schools. By drawing the reader’s attention to the common features underlying the various meditation techniques, the authors succeed in building from ground up a robust scientific and biophysical foundation for spiritual cultivation that demystifies much of the superstition and beliefs that have clouded this field in the past . . .”

**Bodian, Stephan.** *Meditation for Dummies.* IDG Books.


**Brahmakumaris, Prajapati, and Ishwaria Vishwa Vidyala.** *Heart Disease and Meditation.* 2d ed. [Publisher unknown.]


ABSTRACT: PURPOSE: The number of U.S. medical schools offering courses in complementary and alternative medicine (CAM) has risen sharply in recent years. This study gauged the current state of CAM instruction by gathering details about the specific topics being taught and the objectives behind the instruction. METHOD: Data were collected from questionnaires mailed to 123 CAM course directors at 74 U.S. medical schools. RESULTS: Questionnaires were returned by 73 course directors at 53 schools. The topics most often being taught were acupuncture (76.7%), herbs and botanicals (69.9%), meditation and relaxation (65.8%), spirituality.faith/prayer (64.4%), chiropractic (60.3%), homeopathy (57.5%), and nutrition and diets (50.7%). The amounts of instructional time devoted to individual CAM topics varied widely, but most received about two contact hours. The “typical” CAM course was sponsored by a clinical department as an elective, was most likely to be taught in the first or fourth year of medical school, and had fewer than 20 contact hours of instruction. Most of the courses (78.1%) were taught by individuals identified as being CAM practitioners or prescribes of CAM therapies. Few of the courses (17.8%) emphasized a scientific approach to the evaluation of CAM effectiveness. CONCLUSION: A wide variety of topics are being taught in U.S. medical schools under the umbrella of CAM. For the most part, the
instruction appears to be founded on the assumption that unconventional therapies are effective, but little scientific evidence is offered. This approach is questionable, especially since mainstream medicine owes much of its success to a foundation of established scientific principles.

**Bronkhorst, Johannes.** The Two Traditions of Meditation in Ancient India. Stuttgart: F. Steiner Verlag Wiesbaden, 1986.


Theoretical review of meditation and the meditative state as they are described in the classical Tibetan meditation texts, which are compared with modern theories within cognitive psychology.


**Brown, Edward Espe.** Thoughts on thinking: Knowing what to do with your wandering thoughts is perhaps the greatest challenge for meditators. *Yoga Journal*, Nov 2001, pp. 116-120.


Abstract: As mindfulness research advances on a variety of fronts, it has become increasingly important to carefully define and measure the construct. In this commentary, we draw from our recent research experience on these topics in addressing four issues of
primary concern to Bishop et al: The nature of mindfulness, the role of acceptance in the phenomenon, the relation between mindfulness and meditation, and the measurement of mindfulness in meditative and other contexts.


Discusses work of psychologists dealing with meditation-induced problems.

**Bua, Swami.** Time tested tips on meditation: After more than a century of practicing yoga, Swami Bua affirms that contemplative success is a result of consistent effort. *Hinduism Today*, Apr/May/Jun 2003, pp. 40-41.


Contents: The importance of right motive, Self-development or service, Meditation and prayer, The nature of self, The power of thought, Preliminary observations, Concentration, Exercises in concentration, Lower meditation, Objects of meditation, Character building, The culture of the emotions, Higher meditation, The raising of consciousness, The doctrine of the act, The jhanas, Zen meditation, Contemplation, Ways to the One, Conclusion, Notes on group meditation, Subjects for meditation

**Budilovsky, Joan.** *The Complete Idiot’s Guide to Meditation*.


**Bushell, William C.** Possible “transcendence” of pain, sickness, and aging in advanced ascetico-meditational practitioners: Psychophysiological, anthropological, and comparative religious evidence. Center for the Study of World Religions Director’s Seminar, November 17, 1993.


“This study . . . compares a group of advanced practitioners of meditation and related disciplines to normally healthy individuals, to assess whether the two groups differ in age-related hormonal measures.”


**Canter, Peter H.** The therapeutic effects of meditation. *British Medical Journal*, 17 May 2003, 326:1049-1050. Author email: Peter.Canter@pms.ac.uk.

Meditation includes techniques such as listening to the breath, repeating a mantra, or detaching from the thought process, to focus the attention and bring about a state of self awareness and inner calm. There are both cultic and non-cultic forms, the latter developed for clinical or research use. The relaxation and reduction of stress that are claimed to result from meditation may have prophylactic and therapeutic health benefits, and a plethora of research papers purport to show this. However, this research is fraught with methodological problems, which I outline here, along with a short summary of the best evidence for the therapeutic effects of meditation in clinical populations. There is no Cochrane review on meditation.

Showing that certain physiological effects such as a slowed heart rate or a particular electroencephalo-graphic pattern occur during meditation and characterise a “relaxed state” may give insight into how meditation works but does not prove its therapeutic value. Most trials of the cumulative effects of meditation have had weak designs. Trials of transcendental meditation (a popular form of mantra meditation), when controlled at all, often compared self selected meditators with non-meditators or long term meditators with novices. These trials did not control for systematic differences between people who elect to learn the technique and those who do not, and between people who persist with the practice and those who abandon it. Randomised trials have often recruited favourably predisposed subjects so that expectations of benefit differ from control subjects. In trials of transcendental meditation for cognitive effects I found that positive outcome was confined to trials with subjects so recruited and to trials with passive controls such as “eyes closed rest.” Trials with naive subjects and plausible controls (for example, pseudo-meditation) were negative. A similar association was previously found in a meta-analysis of cognitive behavioural techniques (including meditation) for hypertension. Other weaknesses have been use of multiple co-interventions, high attrition, and inadequate statistical analysis. Recent trials in clinical populations are slightly more rigorous but are limited in number.

Controlled trials of mindfulness meditation (detached awareness of experience) have all used co-interventions such as cognitive therapy and have largely not used active controls, so that specific effects cannot be isolated or separated from non-specific effects. Sahaja meditation (passive witnessing of thoughts) improved some outcomes in patients with poorly controlled asthma, but differences were not maintained at two months. People with epilepsy practising sahaja meditation showed a significant reduction in objective stress measures and frequency of seizures, but adequate intergroup comparisons are missing and there were marked differences in anxiety levels and frequency of seizures at baseline between groups. Added to a risk reduction programme for elderly men with hypercholesterolaemia, Benson relaxation response (a non-cultic form of transcendental meditation) had no significant effect on blood lipids, weight, or blood pressure, and although patients with irritable bowel syndrome reported a reduction in symptoms after
six weeks of practising Benson relaxation response, the only significant difference from waiting list controls was for flatulence.6

Transcendental meditation has been studied extensively, but most of the research continues to be carried out by researchers directly involved in the organisation offering transcendental meditation, who seem keen to demonstrate its unique value. A meta-analysis of trials of relaxation and meditation for trait anxiety included 70 trials of meditation and showed that the 35 trials of transcendental meditation were associated with significantly larger effect sizes than other techniques.7 However, it included uncontrolled trials, and its assertion that outcome was not sensitive to research design, type of control, or other confounders is not supported by any data. As it excluded studies of patients with psychiatric illnesses the relevance to clinical populations is unclear. An updated and independent meta-analysis of studies of meditation for anxiety is therefore much needed.

The meta-analysis of trials of cognitive behavioural techniques for hypertension showed that effect sizes were highly sensitive to procedures used for baseline measurements.1 Since then a trial using adequate baseline measures has reported that three months' practice of transcendental meditation significantly reduced clinic measured diastolic and systolic blood pressure over group controls given education.8 Progressive muscle relaxation produced an intermediate effect size. The mean adjusted changes in the transcendental meditation group were 10.7 mm Hg in systolic and 6.4 mm Hg in diastolic blood pressure. This and several other studies by authors associated with the transcendental meditation organisation indicate a positive effect on blood pressure, a claim that should be independently tested.

A trial reporting positive effects of transcendental meditation on exercise tolerance in men with coronary artery disease recruited favourably predisposed subjects, was not randomised, and had large baseline differences in exercise tolerance between groups that exceeded the reported effect sizes.9 The reported positive effect of transcendental meditation on the thickness of the intima media of the carotid artery, a measure of atherosclerosis, is confounded by co-intervention with diet, exercise, herbal supplements, and incomplete analysis of the data due to attrition and lack of funding.10,11 A small trial suggesting some benefit of transcendental meditation for asthma had serious problems related to compliance with the protocol.12 Evidence for the therapeutic effectiveness of transcendental meditation in other indications is either similarly flawed or confined to isolated small scale trials.

Overall, current evidence for the therapeutic effectiveness of any type of meditation is weak, and evidence for any specific effect above that of credible control interventions even more so. The only safety issue seems to be in seriously disturbed patients, in whom meditation may trigger psychotic episodes. The limited evidence that does exist is in indications where reduction of stress may have an important beneficial effect, and future trials with improved design may yet provide more concrete positive results in this area.

References


Based on the author’s Clinical Standardized Meditation (CSM) technique, which is a form of mantra-dhyana for personal growth and clinical purposes. For those who wish to progress beyond the book there is a CSM course workbook together with audiotapes published by Pace Books, Kendall Park, New Jersey. In addition, there is an instructor’s kit, which contains six one-hour cassettes (including the three for the learner), three manuals, and other instructional aids.

Contents: The ageless practice; Is meditation unique?; The scientist takes note; The other side of research; Learning how to meditate; The challenge of tension-release; How to use meditation under stress; Some intriguing rhythms; The “mystery” of the mantra; A few nagging questions; A new partnership; More open to life; The creative meditator; Some problems arise; The misuse of meditation; A therapist’s view; Explaining meditation (A governing apparatus; Shifting gears; Natural lessons); The promise of the future


Abstract: The goals of this work were to assess the effects of participation in a mindfulness meditation-based stress reduction program on mood disturbance and symptoms of stress in cancer outpatients immediately after and 6 months after program completion. A convenience sample of eligible cancer patients were enrolled after they had given informed consent. All patients completed the Profile of Mood States (POMS) and Symptoms of Stress Inventory (SOSI) both before and after the intervention and 6 months later. The intervention consisted of a mindfulness meditation group lasting 1.5 h each week for 7 weeks, plus daily home meditation practice. A total of 89 patients, average age 51, provided pre-intervention data. Eighty patients provided post-intervention data, and 54 completed the 6-month follow-up. The participants were heterogeneous with respect to type and stage of cancer. Patients’ scores decreased significantly from before to after the intervention on the POMS and SOSI total scores and most subscales, indicating less mood disturbance and fewer symptoms of stress, and these improvements were maintained at the 6-month follow-up. More advanced stages of cancer were associated with less initial mood disturbance, while more home practice and higher initial POMS scores predicted improvements on the POMS between the pre- and post-intervention scores. Female gender and more education were associated with higher initial SOSI scores, and improvements on the SOSI were predicted by more education and greater initial mood disturbance. This program was effective in decreasing mood disturbance and stress symptoms for up to 6 months in both male and female patients.
with a wide variety of cancer diagnoses, stages of illness, and educational background, and with disparate ages.


Abstract: The efficacy of meditation-relaxation techniques has been widely researched in the laboratory, but their effectiveness for management of stress in organizational settings is still relatively unexplored. The present study compared relaxation and control conditions as part of a program of stress-reduction in industry. A total of 154 New York Telephone employees self-selected for stress learned one of three techniques—clinically standardized meditation (CSM), respiratory one method meditation (ROM) or progressive relaxation (PMR)—or served as waiting list controls. At 5.5 months, the treatment groups showed clinical improvement in self-reported symptoms of stress, but only the meditation groups (not the PMR group) showed significantly more symptom reduction than the controls. The meditation groups had a 78% compliance rate at 5.5 months with treatment effect seen whether subjects practiced their techniques frequently or occasionally. The safe and inexpensive semi-automated meditation training has considerable value for stress-management programs in organizational settings.


On Siddha meditation and the heart.


Abstract: OBJECTIVES: This study investigated the relationships between a mindfulness-based stress reduction meditation program for early stage breast and prostate cancer patients and quality of life, mood states, stress symptoms, lymphocyte counts, and cytokine production. METHODS: Forty-nine patients with breast cancer and 10 with prostate cancer participated in an 8-week MBSR program that incorporated relaxation, meditation, gentle yoga, and daily home practice. Demographic and health behavior variables, quality of life (EORTC QLQ C-30), mood (POMS), stress (SOSI), and counts of NK, NKT, B, T total, T helper, and T cytotoxic cells, as well as NK and T cell production of TNF, IFN-, IL-4, and IL-10 were assessed pre- and postintervention. RESULTS: Fifty-nine and 42 patients were assessed pre- and postintervention, respectively. Significant improvements were seen in overall quality of life, symptoms of stress, and sleep quality. Although there were no significant changes in the overall...
number of lymphocytes or cell subsets, T cell production of IL-4 increased and IFN-
decreased, whereas NK cell production of IL-10 decreased. These results are consistent
with a shift in immune profile from one associated with depressive symptoms to a more
normal profile. CONCLUSIONS: MBSR participation was associated with enhanced
quality of life and decreased stress symptoms in breast and prostate cancer patients. This
study is also the first to show changes in cancer-related cytokine production associated
with program participation.

Carson, James Wood. Mindfulness meditation-based treatment for relationship
UMI.

Carter, O. L., D. E. Presti, C. Callistemon, Y. Ungerer, G. B. Liu, and J. D.
Pettigrew. Meditation alters perceptual rivalry in Tibetan Buddhist monks. Current
Biology, 7 Jun 2005, 15:R412-R413.

From EurekAlert!, 6 Jun 2005: In an unusual but fruitful collaboration between Tibetan
Buddhist monks and neuroscientists, researchers have uncovered clues to how mental
states—and their underlying neural mechanisms—can impact conscious visual
experience. In their study, reported in the June 7 issue of Current Biology, the researchers
found evidence that the skills developed by Tibetan Buddhist monks in their practice of a
certain type of meditation can strongly influence their experience of a phenomenon,
termed “perceptual rivalry,” that deals with attention and consciousness.

The work is reported by Olivia Carter and Jack Pettigrew of the University of
Queensland, Australia, and colleagues at the University of Queensland and the University
of California, Berkeley.

Perceptual rivalry arises normally when two different images are presented to each eye,
and it is manifested as a fluctuation—typically, over the course of seconds—in the
“dominant” image that is consciously perceived. The neural events underlying perceptual
rivalry are not well understood but are thought to involve brain mechanisms that regulate
attention and conscious awareness.

Some previous work had suggested that skilled meditation can alter certain aspects of the
brain’s neural activity, though the significance of such changes in terms of actually
understanding brain function remains unclear.

To gain insight into how visual perception is regulated within the brain, researchers in the
new study chose to investigate the extent to which certain types of trained meditative
practice can influence the conscious experience of visual perceptual rivalry.

With the support of His Holiness the Dalai Lama, 76 Tibetan Buddhist monks
participated in the study, which was carried out at or near their mountain retreats in the
Himalaya, Zanskar, and Ladakhi Ranges of India. The monks possessed meditative
training ranging from 5 to 54 years; among the group were three “retreatist” meditators, each with at least 20 years of experience in isolated retreats.

The researchers tested the experience of visual rivalry by monks during the practice of two types of meditation: a “compassion”-oriented meditation, described as a contemplation of suffering within the world combined with an emanation of loving kindness, and “one-point” meditation, described as the maintained focus of attention on a single object or thought, a focus that leads to a stability and clarity of mind.

Whereas no observable change in the rate of “visual switching” during rivalry was seen in monks practicing compassion meditation, major increases in the durations of perceptual dominance were experienced by monks practicing one-point meditation. Within this group, three monks, including two of the retreatists, reported complete visual stability during the entire five-minute meditation period. Increases in duration of perceptual dominance were also seen in monks after a period of one-point meditation.

In a different test of perceptual rivalry, in this case prior to any meditation, the duration of stable perception experienced by monks averaged 4.1 seconds, compared to 2.6 seconds for meditation-naïve control subjects. Remarkably, when instructed to actively maintain the duration, one of the retreatist monks could maintain a constant visual perception during this test for 723 seconds.

The findings suggest that processes particularly associated with one-point meditation—perhaps involving intense attentional focus and the ability to stabilize the mind—contribute to the prolonged rivalry dominance experienced by the monks. The researchers conclude from their study that individuals trained in meditation can considerably alter the normal fluctuations in conscious state that are induced by perceptual rivalry and suggest that, in combination with previous work, the new findings support the idea that perceptual rivalry can be modulated by high-level, top-down neural influences.


Abstract: Like other complex, multifaceted interventions in medicine, meditation represents a mixture of specific and not-so-specific elements of therapy. However, meditation is somewhat unique in that it is difficult to standardize, quantify, and authenticate for a given sample of research subjects. Thus, it is often challenging to discern its specific effects in order to satisfy the scientific method of causal inferences that underlies evidence-based medicine. Therefore, it is important to consider the key methodological challenges that affect both the design and analysis of meditation research. The goal of this paper is to review those challenges and to offer some practical solutions. Among the challenges discussed are the mismatches between questions and designs, the variability in meditation types, problems associated with meditation implementation, individual differences across meditators, and the impossibility of double-blind, placebo-controlled meditation studies. Among the design solutions offered are aptitude x treatment interaction (ATI) research, mixed quantitative-qualitative methods, and
practical (pragmatic) clinical trials. Similar issues and solutions can be applied more generally to the entire domain of mind-body therapies.


Abstract: Studies to determine the prevalence of complementary and alternative medicine (CAM) use among cancer patients show international interest in a wide collection of therapies and a broad span of use, ranging from 7% to 64% of patients sampled. The absence of consistent results across studies is due primarily to differing definitions of unconventional cancer therapies from study to study. Treatments promoted as alternatives to mainstream cancer cures (e.g., the recently disproved “cancer cure” of Italy’s Dr. Di Bella) should be distinguished from complementary therapies, which are applied as adjuncts to mainstream care in an integrated fashion. The latter include mind-body techniques and herbal remedies, among many other remedies, all aimed at symptom control and enhanced quality of life. This differentiation provides a clearer understanding of CAM activity and enables selective evaluation of CAM’s clinical effects. It permits us to avoid accepting or rejecting all of CAM out of hand. Health care professionals as well as patients and their families have become increasingly knowledgeable about complementary therapies that can be helpful to patients with cancer. Many such therapies have been well studied (meditation, tai chi), and others remain highly questionable (homeopathy, electromagnetics). Their benefits and potential problems are reviewed.


BACKGROUND AND PURPOSE: African Americans suffer disproportionately higher cardiovascular disease mortality rates than do whites. Psychosocial stress influences the development and progression of atherosclerosis. Carotid intima-media thickness (IMT) is a valid surrogate measure for coronary atherosclerosis, is a predictor of coronary outcomes and stroke, and is associated with psychosocial stress factors. Stress reduction with the Transcendental Meditation (TM) program decreases coronary heart disease risk factors and cardiovascular mortality in African Americans. B-mode ultrasound is useful for the noninvasive evaluation of carotid atherosclerosis. METHODS: This randomized controlled clinical trial evaluated the effects of the TM program on carotid IMT in hypertensive African American men and women, aged >20 years, over a 6- to 9-month period. From the initially enrolled 138 volunteers, 60 subjects completed pretest and posttest carotid IMT data. The assigned interventions were either the TM program or a health education group. By use of B-mode ultrasound, mean maximum IMT from 6 carotid segments was used to determine pretest and posttest IMT values. Regression analysis and ANCOVA were performed. RESULTS: Age and pretest IMT were found to be predictors of posttest IMT values and were used as covariates. The TM group showed a significant decrease of -0.098 mm (95% CI -0.198 to 0.003 mm) compared with an increase of 0.054 mm (95% CI -0.05 to 0.158 mm) in the control group (P=0.038, 2-
tailed). **CONCLUSIONS:** Stress reduction with the TM program is associated with reduced carotid atherosclerosis compared with health education in hypertensive African Americans. Further research with this stress-reduction technique is warranted to confirm these preliminary findings.


Abstract: The fundamental problem in studying Buddhist meditation is that most of the studies regard the meditative process as a resultant situation with static linear stages rather than being an actual activity. Due to this bias, the hermeneutic role that the authors play in the Buddhist texts have not had an opportunity to be acknowledged along with the strategies and methods that the authors invented. Applying Ricoeur's hermeneutic theory and linguistic perspectives, this study focuses on the methods that early Buddhist texts applied to interpret the process of meditation. Using the model of “Contemporary Composing Theory” suggested by Ben McClelland, an in-depth analysis on the process of Buddhist meditation, reveals the essential aspects of the developmental process in meditation. Viewing how the interpretative methods play a vital role in bridging the gap between the linguistic interpretation and the meditative experience, this study examines how Buddhist texts have been interpreted by the use of two predominate methods: “System” and “Narration.” By first demonstrating how the systematic methods dominate the interpretation of the Buddha's teachings from their inception to the fifth century C.E.; next an examination of the systematic methods shows that there has been a historical development that formed the *Abhidharma/Abhidhamma* texts from Numerical Lists (mtik), Theme, and Meta-Theme structures. Further exploration of how narrative methods were applied in interpreting instruction on “breathing meditation” further scrutinizes the “Eight Steps of Mindfulness Breathing” in Chapter eight of the “Visuddhimagga.” Buddhaghosa’s innovation illustrates a more complete description of the developmental aspects found in the meditation process. From investigating the methods of description, a refined Buddhist hermeneutic approach to study, read, and apply Buddhist doctrines emerges.


Abstract: This study analysed the correlation between contemplation and psychosis from three cases of patients presenting psychotic symptoms subsequent to practising meditation. Sleep loss following a wrong doing in meditation was found to be the main cause in the first two cases, and drug withdrawal was found to be the principal factor in
causing a psychotic eruption in the third case. In this last case, sleep deprivation subsequent to meditation was only a minor influence. Discussion regarding the correlation between meditation and psychosis is presented in this study.


Contents: What is meditation?, Meditation and health, Meditation theory and philosophy, Preparing for meditation, How to meditate

**Chinmoy, Sri.** *Ecstasy’s Trance: Esraj Music for Meditation.* Jamaica, N.Y.: AUM Publications.

__________. *Flute Music for Meditation* CD. Jamaica, N.Y.: AUM Publications.

“What in a state of deep meditation, Sri Chinmoy plays his haunting melodies on the echo flute.”


Topics include: Proven meditation techniques that anyone can learn, How to still the restless mind, Developing the power of concentration, Carrying peace with you always, Awakening the heart center to discover the power of your soul, How to effectively pray, A section in which Sri Chinmoy answers questions on a wide range of experiences often encountered in meditation.


On walking meditation.


**Cianciosi, John.** One step at a time: Learning to establish awareness during walking meditation helps to develop mindfulness during the activities of your daily life. *Yoga Journal,* Nov 2002, pp. 81-84.


Abstract: There is growing attention to the health benefits of mind/body interventions, particularly relaxation and meditation. Biomedical research has provided undeniable evidence of the interconnectedness of the mind and body. The field of psychoneuroimmunology has defined the role of stress in reducing effectiveness of the immune system in combating infection and growth of malignant tumors. This article explains the development of meditation practice and explores the indications that the practice of meditation is effective reducing the harmful effects of stress. In addition, there are encouraging reports of studies citing the influence of melatonin on breast and prostate tumors. A preliminary study finds an association between meditation practice and levels of melatonin produced by the pineal gland.


Cope, Stephen. Seeing eye to eye: When it comes to practicing mindfulness, the yoga and Buddhist traditions have much in common. Yoga Journal, Jul/Aug 2003, pp. 123-126.


From the publisher: “Leading American teachers of Buddhism and yoga share their personal reflections on how the practice of these ancient traditions has affected their daily life experiences. Their stories offer inspiration and guidance to every individual asking ‘How can my practice of yoga and meditation help me lead a more satisfying life?’—a central question on which every spiritual seeker and practitioner of yoga and meditation inevitably must reflect.”

Abstract: Autonomic and electroencephalographic (EEG) correlates of Tantric Yoga meditation were studied in three groups of subjects as they progressed from normal consciousness into meditation. Groups differed in their level of meditation proficiency. Measures of skin resistance, heart rate, respiration, autonomic orienting responses, resting EEG, EEG alpha and theta frequencies, sleep-scored EEG, averaged evoked responses, and subjective experience were employed. Unlike most previously reported meditation studies, proficient meditators demonstrated increased autonomic activation during meditation while unexperienced meditators demonstrated autonomic relaxation. During meditation, proficient meditators demonstrated increased alpha and theta power, minimal evidence of EEG-defined sleep, and decreased autonomic orienting to external stimulation. An episode of sudden autonomic activation was observed that was characterized by the meditator as an approach to the Yogic ecstatic state of intense concentration. These findings challenge the current "relaxation" model of meditative states.


Abstract: Chest pain with normal coronary angiograms is often associated with chronic sympathetic activation, anxiety, and depression, and is resistant to conventional antianginal treatment. The practice of Transcendental Meditation, a standard relaxation method for 3 months twice daily, significantly improved exercise tolerance, angina episodes, and quality of life in 9 women; the positive findings in this study warrant further research.


Abstract: Objective: We tested whether meditation can reduce sympathetic activation, evaluated by norepinephrine blood levels (NE), and improve quality of life in elderly persons with congestive heart failure (CHF). Design and Setting: This was a prospective, randomized study conducted from April 2000 to October 2001 in an ambulatory care teaching hospital in São Paulo, Brazil. Subjects: We studied 19 patients with CHF, 74.8 +/- 6.7 years old, receiving diuretics, optimal doses of an angiotensin-converting enzyme inhibitor or angiotensin II inhibitor, maximum tolerated carvedilol dose (23.1 +/- 13.6 mg) and spironolactone 25 mg (10 patients). Interventions: After 2 months of optimal treatment with carvedilol, patients were randomized into two groups. The meditation group (M) was provided an audiotape, 30 minutes long, to listen to at home, twice a day, for 12 weeks, plus a weekly meeting. The control group (C) just had weekly meetings. Main Outcome Measures: We determined before and after 14 +/- k1 weeks, NE (in pg/mL); quality of life with the Minnesota Living with Heart Failure Questionnaire (MLWHFQ); VO2 and VE/VCO2 slope by cardiopulmonary exercise testing; left ventricular ejection fraction (LVEF), and left ventricular end-diastolic volume index (LVDDi) measured by echocardiography. Results: Meditation reduced NE (mean +/- SEM) from 677.7 +/- 96.6 to 387.1 +/- 39.1 pg/mL (p = 0.008) in M versus 491.4 +/- 35.9 to 470.6 +/- 31.2 (p = 0.34) in C; improved MLWHFQ total score (mean +/- SEM) from 33.2 +/- 6.6 to 21.6 +/- 6.8 points (p = 0.02) in M versus 18.4 +/- 8.0 to 25.1 +/- 8.9 (p = 0.41) in C; and reduced the VE/VCO2 slope (mean +/- SEM) from 31.2 +/- 3.0 to 28.2 +/- 2.6 (p = 0.04) in M versus 28.4 +/- 2.7 to 28.8 +/- 2.6 (p = 0.24) in C. No changes occurred in LVEF, LVDDi, and VO(2). Conclusions: In elderly patients with optimally treated CHF, meditation reduced NE, improved quality of life, and reduced the VE/VCO(2) slope. Our results support the possible role of meditation as a new hope in the treatment of CHF.


Abstract: The impact of meditation on cardiorespiratory synchronization with respect to breathing oscillations and the modulations of heart rate induced by respiration (respiratory sinus arrhythmia, RSA) was investigated in this study. Four different exercises (spontaneous breathing, mental task, Zen meditation, and Kinhin meditation) were consecutively performed by nine subjects mainly without any experience in meditation. An electrocardiogram and a respiratory trace were recorded simultaneously. On this basis the degree of cardiorespiratory synchronization was quantified by a technique which has been adopted from the analysis of weakly coupled chaotic oscillators. Both types of meditation showed a high degree of synchronization, whereas heartbeat and respiration were hardly synchronized during spontaneous breathing. During the mental task exercise the extent of synchronization was slightly higher than during spontaneous breathing. These results were largely determined by the breathing frequency because the two types of meditation induce low breathing frequencies which led to a pronounced and in-phase RSA. During the meditation the low breathing frequencies led
to a decrease in the high frequency of heart rate variability, whereas the low frequency and the extent of RSA increased. The heart rate primarily reflected the degree of physical effort. The high degree of cardiorespiratory synchronization during meditation in unexperienced meditators suggests that the physiological implications of meditation does not require prior experience in meditation.


Abstract: OBJECTIVE: The underlying changes in biological processes that are associated with reported changes in mental and physical health in response to meditation have not been systematically explored. We performed a randomized, controlled study on the effects on brain and immune function of a well-known and widely used 8-week clinical training program in mindfulness meditation applied in a work environment with healthy employees. METHODS: We measured brain electrical activity before and immediately after, and then 4 months after an 8-week training program in mindfulness meditation. Twenty-five subjects were tested in the meditation group. A wait-list control group (N = 16) was tested at the same points in time as the meditators. At the end of the 8-week period, subjects in both groups were vaccinated with influenza vaccine. RESULTS: We report for the first time significant increases in left-sided anterior activation, a pattern previously associated with positive affect, in the meditators compared with the nonmeditators. We also found significant increases in antibody titer to influenza vaccine among subjects in the meditation compared with those in the wait-list control group. Finally, the magnitude of increase in left-sided activation predicted the magnitude of antibody titer rise to the vaccine. CONCLUSIONS: These findings
demonstrate that a short program in mindfulness meditation produces demonstrable
effects on brain and immune function. These findings suggest that meditation may
change brain and immune function in positive ways and underscore the need for
additional research.

**Dayananda, Swami, and Janaki Vunderink.** *Hatha Yoga for Meditators as Taught in
the Ashrams of Swami Muktananda.* 1981.

**Deepak K. K.** Neurophysiological mechanisms of induction of meditation: a

Abstract: A detailed analysis of methods of induction of meditation and meditative
experience encountered therein implicates involvement of several mechanisms in
inducing “meditative effect.” “Efferent attenuation,” “sensory attenuation” and “cognitive
restructuring” appear three possible mechanisms employed in varying degree of
combinations to produce the “meditative effect” during different types of meditations.
Using hypothetico-deductive approach, it is possible to generate a neural model for
explaining the “meditative effect.” Primarily, the meditation is produced by disengaged
association cortices driven by thalamus or other older group of reticular nuclei.
Secondarily, there may be involvement of some more phylogenetically older structures
depending upon depth and types of meditation. This model explains induction,
maintenance and long-term effects of meditation.

**Deikman, Arthur.** The state-of-the-art of meditation. In Deane H. Shapiro, Jr., and
Roger N. Walsh, *Meditation: Classic and Contemporary Perspectives.* Hawthorne, N.Y.:

**Delmonte, M. M.** Personality characteristics and regularity of meditation. *Psychological


________. Electrocortical activity and related phenomena associated with meditation

Abstract: The state effects of meditation appear to include decreased electrocortical
arousal. There is also evidence that meditators more readily demonstrate alpha and theta
activity than nonmeditators, even when not meditating. It is not clear whether prospective
meditators as a group already possessed this characteristic, or whether the state effects of
meditation practice eventually generalize to become traits. However, certain individuals,
namely the psychologically “healthy” and those with a capacity for relaxed absorbed
attention, appear to be more favourably disposed to meditation. Meditators appear to
show both stronger orienting and recovery responses to stressors while meditating than
controls. Meditation may begin with left hemisphere type activity, which gives way to
functioning more characteristic of the right hemisphere. However, it appears that during
advanced meditation (“no thought”) both left and right hemisphere activity are largely
inhibited or suspended. Depending on the individual, inexperienced meditators may
report sleep, hypnogogic reverie, trance or abreaction during practice. The evidence to
date does not support the notion of unique state effects associated with the practice of
meditation.

Factors influencing the regularity of meditation practice in a clinical

Physiological concomitants of meditation practice. *International Journal

Abstract: Meditation has bee nextensively researched in terms of physiological
responsivity. Although practice is associated with both state and trait (long-term)
decrements in arousal (especially in blood pressure, muscle tension and respiratory
indices) there is, generally, no compelling evidence to suggest superiority to other
established relaxation techniques (except, perhaps, in the case of blood pressures). At
best, meditation appears to be somewhat more relaxing than eyes-closed rest. Thee is
little to support the notion of unique state effects associated with practice. However,
meditators appear to show stronger recovery responses to stressful stimuli than controls.
This finding warrants further investigation.

Meditation is increasingly gaining prominence as a self-management and personal
development technique as well as becoming more prevalent in the clinical setting as an
adjunct to psychotherapy. This is particularly true in the case of Transcendental
Meditation (TM) and its non-cultic or clinically adapted variants. However, there is no
extensive up-to-date review of the research literature dealing with the
psychophysiological effects of meditation practice. This article addresses that issue by
reviewing the effects of meditation.

Physiological responses during meditation and rest. *Biofeedback and Self-


Biochemical indices associated with meditation practice: A literature

Abstract: Research findings on biochemical responsivity to meditation are reviewed.
Although there are some contradictory and inconclusive outcomes, there is nevertheless
sufficient evidence of interest to warrant further investigation of this area. However, in
the meantime, there is no compelling basis to conclude that meditation practice is
associated with special state or trait effects at the biochemical level.

Meditation and anxiety reduction: A literature review. *Clinc Psychol Rev*,


“One of the most valuable things we can do for our children is to help them establish a daily time of meditation and prayer.”


From the publisher: “This handy, spiral-bound manual includes shamatha meditation instructions, the six preliminary practices for beginning a meditation practice, Tong-len, Shakyamuni, Chenrezig, White Tara Healing, Long-life prayer and so forth, many . . . with brief introductory instructions.”


Desikachar, T. K. V. Desikachar interviews Martin Pierce on Meditation. Posted to e-Sutra 10 Sep 04 (from an earlier posting).


From the Publisher: “It may be true that children between the ages of 18 months and three years can lead generally happy, contented lives, but most parents will probably attest in some degree to the veracity of the stereotypical ‘terrible twos,’ that is, the often difficult second year in a child’s life, when separation anxiety, selfishness, and aggression become possible. In this selection, pre-school teacher and meditator Lisa Desmond presents a unique method of meditation for children, which retains meditation’s traditional goal of personal transformation while adapting the method to meet the toddler’s need for a variety of visual, aural, and tactile learning strategies. Children learn to love themselves and others, to respect all living things, and even to deal with death, through a series of progressively scaled meditative affirmations. Baby Buddhas gives parents and children techniques they can use to overcome the mundane and exceptional challenges that families encounter, while simultaneously providing them new ways to bond and share their love.”


Interest in the clinical use of mindfulness practices has expanded rapidly in recent years. To provide a direction for future research in this area, this article identifies the primary scientific and clinical questions regarding the clinical application of mindfulness practice. In particular, the following questions are addressed: What is mindfulness? What are the consequences of separating mindfulness from its spiritual and cultural origins? Is mindfulness training an efficacious treatment intervention? What are the active or essential ingredients of mindfulness training? Can mindfulness enhance clinical practice apart from its role as a clinical intervention? How does mindfulness work? How should therapists be trained in order to deliver mindfulness interventions competently? Is mindfulness training amenable to widespread dissemination?


Does meditation have detrimental effects? A thread in the Meditation in Psychotherapy online forum. URL: http://www.behavior.net/cgi-bin/nph-display.cgi?MessageID=1&Top=-1&config=meditation&uid=nC1M8.user&new=0&adm=0.


Abstract: Despite the fact that the various Tibetan Buddhist traditions developed substantive ethical systems on the personal, interpersonal and social levels, they did not develop systematic theoretical reflections on the nature and scope of ethics. Precisely because very little attention is devoted to the nature of ethical concepts, problems are created for modern scholars who are thus hindered in making comparisons between Buddhist and Western ethics. This paper thus examines the continuity between meditation and daily life in the context of understanding the ethical character of meditation as practiced by Tibetan Buddhists. The discussion is largely limited to the practice of meditation as taught in the lam rim (or Gradual Stages of the Path).


Conclusions: “The scientific literature on meditation indicates that controls for distraction or for just sitting or lying quietly and undisturbed are seldom to be found in the many studies that demonstrate positive benefits from meditation. When appropriate controls are present, no evidence supports the notion either that meditation reduces arousal any more than does simply resting quietly or that meditation permits a person to better cope with a stressor. When meditation has been found to be effective for such things as reducing hypertension, the combined use of other techniques, such as relaxation training, precludes a clear attribution of any positive effects to meditation itself. Life-style changes to reduce conflict are also apparently instrumental, a sensible enough conclusion and one that is consistent with the growing recognition that successful interventions must usually be multifaceted. The highly publicized feats of some yogis who can remain buried for many hours without suffocating are probably due not to any special properties of meditation, but rather to confidence in their ability to slow down their respiration rate as well as faith that they can survive the ordeal if only they do not panic and use up more oxygen than normal. Consistent with findings from the committee’s earlier report, perceived control and predictability are inherently anxiety-reducing. A related possibility concerns the philosophical context for most meditation practices. It may be that meditation and relaxation (and perhaps also relaxation achieved with certain forms of biofeedback) effect cognitive change, not the least of which may be an enhanced sense of self-efficacy, a belief that one can control one’s stress reactions to some extent . . .”

Abstract: Electroencephalographic (EEG) recordings from 19 scalp recording sites were used to differentiate among two posited unique forms of mediation, concentration and mindfulness, and a normal relaxation control condition. Analyzes of all traditional frequency bandwidth data (i.e., delta 1-3 Hz; theta, 4-7 Hz; alpha, 8-12 Hz; beta 1, 13-25 Hz; beta 2, 26-32 Hz) showed strong mean amplitude frequency differences between the two meditation conditions and relaxation over numerous cortical sites. Furthermore, significant differences were obtained between concentration and mindfulness states at all bandwidths. Taken together, our results suggest that concentration and mindfulness “meditations” may be unique forms of consciousness and are not merely degrees of a state of relaxation.


“Learn how to balance your spine and your limbs, your body, and your breath.”


From the publisher: “Meditation . . . After you’ve adjusted your posture, closed your eyes, and focused on your breath, what happens next? Picking up where most books on meditation end, this practical guide explores the landscape of the interior world—the magic and mystery of the inner being.

“Readers are given a map of the different inner states and their significance. They discover techniques for moving beyond troublesome thoughts by tuning into the energy that ‘creates’ thoughts. They are given keys to unlock practices like mantra repetition and witness-awareness. And they learn how to trouble-shoot their own meditation practice.

“Swami Durgananda, a former journalist, is a brilliant writer, able to articulate the subtle inner experience in a way that makes it accessible and tangible for everyone. She integrates her twenty-eight years of meditation experience with the teachings of her meditation masters Swami Muktananda and Gurumayi Chidvilasananda in a book that is personal, engaging, brimming with spiritual insights and practical wisdom.”


Dworkis, Sam. Yoga is meditation in action. Article available online: http://www.extensionyoga.com/Meditation.htm.


On overcoming difficulties in meditation.


Abstract: Transcendental meditation (TM) is a stylized form of physical and mental relaxation which is associated with changes in the secretion and release of several pituitary hormones. The hormonal changes induced by TM mimic the effects of the inhibitory neurotransmitter gamma aminobutyric acid (GABA). It is hypothesized that TM produces changes in pituitary hormone secretion by enhancing hypothalamic GABAergic tone as a result of TM associated ketosis. Ketosis enhances the entry of glutamate, the amino acid substrate of GABA into synaptosomes, making more glutamate available for conversion to GABA through the glutamate decarboxylase pathway.

**Elson, Barry D., Peter Hauri, and David Cunis.** Physiological changes in yoga meditation. *Psychophysiology*, Jan 1977, 14:52-57.


**Engel, Klaus.** Meditative experience and different paths: Data-based analyses. Society for Meditation and Meditation Research, 2000. Email: klausengel@yahoo.de, URL: http://buerger.metropolis.de/klausengel/index.htm.


Abstract: So-called “intrusive thoughts” appear independently from external stimuli and are the cause of severe disturbances in depressed patients. Following Baddeley’s 1986 discoveries regarding “articulatory suppression,” we investigated the influence of praying and of a working memory task on the number of spontaneous thoughts reported by 20 subjects compared to the control (quiet) state. Two groups of subjects were tested: those trained in meditation and controls. Significant reduction in simultaneous thought arousal was obtained during both the working memory task and the recitation of prayer. In all three experimental conditions, meditation practitioners reported significantly fewer spontaneous thoughts.

**Falcon, Mike, with medical adviser Stephen A. Shoop, M.D.** Hollywood’s hushed health secret. *USA Today*, Health section, 26 Apr 2000.

“From Madonna to Richard Gere, meditation is where many stars turn to counteract the effects of a lifestyle that can get to be too much. Although not as visible as it was in the days of candles and sandals—when The Beatles helped make meditation fashionable worldwide—this ancient technique is used by many celebrities to wind down, work peacefully ‘inside,’ and promote deep states of wellness.

“‘Celebrity meditators are a lot more quiet about their practices than in the ‘70s,’ notes Patricia Monaghan, author of *Meditation: The Complete Guide*. ‘That’s not too surprising, especially when you consider that adulation of a personality, or elevation of the ego, are usually thought of as well outside the goals of most meditative practice . . .’”


Abstract: We observed, over four independent experiments, 565 criterion-meeting episodes of breath suspension in 40 subjects practicing the Transcendental Meditation technique (TM), a simple mental technique involving no breath control procedures. The frequency and length of these breath suspension episodes were substantially and significantly greater for TM subjects than for control subjects relaxing with eyes closed. Voluntary control of respiration was most probably eliminated as an explanation of this phenomenon by the experimental design and by the use of a variety of nonintrusive respiration transducers, including a two-channel magnetometer, an indirect but accurate means of monitoring respiration. Many TM subjects report experience of a completely quiescent mental state characterized by maintained awareness in the absence of thought. Eleven TM subjects were instructed to press an event mark button after each episode of this pure consciousness experience. The temporal distribution of button presses was significantly related (p less than 10(-10) to the distribution of breath suspension episodes, indicating that breath suspension is a physiological correlate of some, but not all, episodes of the pure consciousness experience. In an extensive study of a single advanced meditator, pure consciousness experiences were also associated with reduced heart rate; high basal skin resistance; stable phasic skin resistance; markedly reduced mean respiration rate, mean minute ventilation and mean metabolic rate; and statistically
consistent changes in EEG power and EEG coherence (an indicator of long-range spatial order in the nervous system).


“Fifteen years ago, Barbara Holt would have described herself as a classic Type A personality: hard-driving and goal-oriented.

“She also was scattered and exhausted.

“‘I would wake up and hardly be able to drag myself out of bed,’ she says . . .

“Then Holt found that the key to her energy lay in her mind.

“What causes us to drag through our days isn’t always physical, experts say. Our thoughts can make us tired. The events of everyday life, whether related to work, money or relationships, can trigger emotions that ignite the body’s stress response. If the stress is constant, fatigue can result.

“The good news is that you can get back in control.

“Holt eventually transformed her condition from tense and tired to calm yet energetic through yoga and meditation . . .”


**Fishman, Barbara Miller.** *Emotional Healing through Mindfulness Meditation: Stories of Women and Guided Meditations for Those Seeking Wholeness*. Rochester, Vt.: Inner Traditions, 2002. Guided meditations are included on an accompanying 60-minutes CD.

From the publisher: “As a result of her years of working with women as a psychotherapist, Barbara Miller Fishman developed the discipline of Mindfulness
Psychotherapy—a combination of mindfulness meditation and psychotherapy that, taken altogether, describe a path toward wholeness. [In *Emotional Healing*] she presents the integration of her life’s work thorough the poignant stories of eight women—all faced with critical decisions and tough life circumstances—and how they used Mindfulness Psychotherapy to attain greater levels of peace and well-being.

“The author offers a radical shift in a woman’s relationship to life. Readers will discover the importance of naming a life problem, accepting the ‘is-ness’ of it, developing a matter-of-fact curiosity, and exploring the mind/body reactions that we call emotional pain. The path continues as the reader creates an observing self and discovers the deep compassion that ultimately heals. Once learned, these six awareness practices can be used to face difficult situations, discover self-acceptance, and release the love needed to reside fully in ones’ whole self.”


From the publisher: “Dr. Fleishman explores the interface between psychiatry, science, and meditation.”

**Forstater, Mark.** *Yoga Masters: How Yoga Theory Can Deepen Your Practice and Meditation.* Dutton/Plume.


“Twenty years ago, Fran Palumbo was seeing three doctors and two therapists for the almost unbearable pain in her back caused by a noncancerous lump. One night, she started weeping uncontrollably. And then, dreamlike, her whole life flashed in front of her eyes.

‘I realized I had the worst disease of all. The disease of attitude,’ says the Fairfield, Conn., resident. ‘That was my moment of truth. I started to pray for wisdom.’ Those prayers led her to meditation, a practice she has done daily since 1985.

“Back then, she was like every other suburban mother, running between tasks: driving car pools, attending PTA and Cub Scout meetings, helping her husband with his business.

“Two weeks meditating, the lump went away,” she said. ‘I began to see things with fresh eyes. I never realized the sky was so blue. And please don't think I’m crazy, but I can taste the clouds in a glass of water.” Palumbo’s only regret is that she didn’t discover meditation years before. ‘It is the most powerful gift you can give yourself.’”

**Foust, Sudhir Jonathan.** *The Kripalu Approach to Meditation* audiotape. Lenox, Mass.: Kripalu Center for Yoga and Health.


Abstract: An exploratory, phenomenological investigation was conducted of psychologists who were Buddhist, or who felt strongly influenced by Buddhism, to investigate the way in which their clinical work was impacted by their spiritual beliefs and practices. Interviews were conducted of 12 psychologists using a semi-structured interview format. After analysis of the qualitative data two significant themes emerged. Theme I consisted of the reports that Buddhist meditation practices significantly impacted the subjects’ clinical work by increasing their abilities to be present with their clients and also by increasing the awareness of their own internal process during clinical sessions. Conflicting thoughts regarding the use of meditation with clients were also addressed. The evidence in Theme II suggests that for many of these subjects their identities as Buddhists seemed to overshadow their identities as clinical psychologists. Furthermore, it seemed as if it was their spiritual practice that served as the foundation for their clinical practice. They reported perceiving numerous limitations to Western psychotherapy and indicated that for them, their Buddhist practice helps to deepen and expand, not only Western psychological understanding, but also their practice of clinical psychology in general. These findings were compared and contrasted to existing literature in the field. Limitations to this study were noted and suggestions for further research were made.


Abstract: How patients with coronary artery disease respond to stress can effect their cardiac health. This study examined whether patients with documented coronary artery disease would be able to learn a self-help skill which would reduce cardiac reactivity during mildly stressful and restful activities. Cardiac stress was determined measuring
Heart Rate Variability (HRV), an indication of autonomic arousal. HRV has been shown to be a predictor of sudden cardiac death in patients with cardiac disease. 56 patients with documented coronary artery disease were randomized to receive either a cardiac stress management video or a meditation video which guided them through a standard a standard Zen breath awareness meditation. The technique involved becoming attentionally absorbed in the breath, but not manipulating it. Patients’ HRV (SDNN) was measured during several conditions including rest, reading, paced breathing, Stroop color word conflict stressor, post stressor rest, post stressor reading, and post stressor paced breathing. Patients who received meditation instruction significantly increased heart rate variability post intervention compared to patients who received a stress management lecture (p <= .007). In addition, patients who engaged in meditation practice handled stress better, as indicated by an increase in heart rate variability during the Stroop task (p <= .042) and post-intervention pre-stressor paced breathing period (p <= .006). Results suggest that engaging in even one brief period of Zen breath meditation awareness can be effective for improving the heart’s response to stress for patients with coronary artery disease.


Abstract: This study is an attempt to rigorously map the psychological effects of Zen meditation among experienced practitioners. Fifty-nine Zen meditators with at least six years of experience practiced an hour of traditional Zazen seated meditation. A control group of 24 college students spent 60 min silently reading popular magazines. Before relaxation, all participants took the Smith Relaxation States Inventory (SRSI), the Smith Relaxation Dispositions/Motivations Inventory (SRD/MI), and the Smith Relaxation Beliefs Inventory (SRBI). After practice, participants again took the SRSI. Analyses
revealed that meditators are less likely to believe in God, more likely to believe in Inner Wisdom, and more likely to display the relaxation dispositions Mental Quiet, Mental Relaxation, and Timeless/Boundless/Infinite. Pre- and postsession analyses revealed that meditators showed greater increments in the relaxation states Mental Quiet, Love and Thankfulness, and Prayerfulness, as well as reduced Worry. Results support Smith’s ABC Relaxation Theory.


Contents: Muladhara chakra/prithvi mandala; Swadhisthana chakra/apas mandala; Manipura chakra/tejas mandala; Anahata chakra/vayu mandala; Vishuddhakya chakra/akasha mandala; Ajna chakra; Manas mandala


____________. The importance of daily meditation. Article available online: http://www.vri.dhamma.org/newsletters/nl0102.html.


Contents:

The Psychological and Cultural Background of Meditation and Art: The well of life, Parallelism between art and meditation, The problem of subject and object, Art and spiritual training, Abstract art

Experiences of Meditation and Their Expression in Painting and Poetry: Introduction to a “Cosmic meditation” (The fundamental forms of our world, Relations between three-dimensional forms and colours), Cosmic meditation (“Becoming” or “Brahma, the Creator”, “Being” or “Vishnu, the Preserver” [the Law], “Dissolution or Shiva, the Transformer”), Ecstatic meditation (Labyrinth, Breaking through Liberation, Colour hints), Concentric meditation (Retirement [first stage of absorption], Unification [the “quietness of the inner sea”], Birth of happiness, Harmong [samâdhi], Colour hints), Meditations on nature (Mount Meru, Dynamic composition), Appendix to the “Cosmic meditation,” Quotations


Abstract: A Tibetan meditation system reported in 1882 suggested a way to facilitate self-awareness by isolating students from electrical ground while they sat beneath a bar magnet and looked at their image in a polished copper wall. The research question: Does an electrostatic charge build up on electrically-isolated meditators? This question was tested with 10 “regular” subjects (typical meditators) and 9 “exceptional” subjects (experienced Non-Contact Therapeutic Touch (NCTT) therapists) in a Copper Wall Lab designed to isolate the subject from ground and also isolate, individually, four surrounding copper walls, front, back, up, and down. For detection of electrostatic potential, the subject’s body and the four walls were individually "floated" on single-ended electrometer inputs. A pair of video cameras guarded against body-motion artifact. In 45-minute meditation sessions with the 10 regular meditators, no body-potential surges reached 4 v. In comparison, in comparable meditation sessions with the NCTT
meditators, many body-potential surges greater than 4 v were found. Surges appearing in
the records of NCTT meditators ranged from 4 v to 221 v (median = 8.3 v), with surge
duration ranging from 0.5 s to 12.5 s (median = 3.6 s). During NCTT therapy sessions
with patients, NCTT therapists produced body-potential surges ranging from 4 v to 190 v.
The majority of surges were of negative polarity. Though there is a long tradition of Non-
Contact Therapeutic Touch in both folklore and in religion, there are as yet no known
psychophysiologic or biophysical explanations for such large-magnitude electrical
phenomena, 103 times greater than large psychophysiologic skin-potential (GSP) changes
related to emotional responses, 105 larger than EKG voltages, and 106 larger than EEG
voltages. Since focus-of-attention by NCTT therapists is often a correlate factor in this
anomalous phenomenon, results suggest the presence of previously-unmeasured human
potential, as well as body potential. Various schemes are discussed for analysis of body-
potential surge data, with an eye to determining body mechanisms that might be capable
of generating electrostatic charge.


Grilley, Paul. Yin yoga: Every meditator knows the pains of stiff knees and an aching
back. By stretching the connective tissue, these poses condition you to sit longer—and

Gruber, Christina Gruber, and Christiane Rieger. Entspannung und Konzentration:
Meditieren mit Kindern. Germany: Kösel-Verlag. [In German.]

Gulla, J., and A. J. Singer. Use of alternative therapies among emergency department

STUDY OBJECTIVE: To assess emergency department patients' use of alternative
therapies. METHODS: This study used a cross-sectional observational survey of a
convenience sample of ED patients. A trained research assistant administered a written
questionnaire asking patients about alternative therapies. RESULTS: Of the 139 patients
surveyed, 78 (56%) had tried alternative therapies in the past, 68 (87%) of whom
believed that they were effective. The most frequently tried alternative therapies were
massage therapy (31%), chiropractic (30%), herbs (24%), meditation (19%), and
acupuncture (15%). Most patients (70%) who tried alternative therapies did not inform
their physicians of such practice. CONCLUSION: Most ED patients in our sample had
tried alternative therapies and among these patients, most did not inform their physicians.
Herbal therapy in particular had been tried by about 1 in 4 patients. Emergency
physicians should routinely question their patients regarding the use of alternative
therapies, particularly herbal preparations, which may cause adverse effects.

Gunaratana, Bhante Henepola. Mindfulness in Plain English. Somerville, Mass.:
“One of the best nuts-and-bolts meditation manuals . . . lays out the fundamentals of basic Buddhist meditation, the how, what, where, when, and why, including common problems and how to deal with them.”


**Gustavsson, Bengt.** The effects of meditation on two top management teams. Article available online: http://www.fek.su.se/Home/gus/PAPERS/Tmmgmtte.htm.

Abstract: The effects of introducing a meditation technique, the Transcendental Meditation (TM) technique, was studied in two top management teams. The research methods consisted of a mixture of quantitative inventories and qualitative interviews. The effects were studied on the individual meditating managers and on the top management teams as a whole. The period of study consisted of short-term effects (4-7 months) in both teams, and a longitudinal study (2-3 years) of one team.

The general trends suggest that the effects on the individuals also effected the group as a whole, including those managers not participating in the TM-program. The findings in the research indicates increased energy and alertness in the meditating managers, which influenced the group towards a more dynamic climate, and at the same time increased the demands on the group and its leadership. The relations between the members of the groups also seem to have improved.

Another trend suggests that the managers were able to express more subtle levels of their personalities, such as the emotional life and intuition of decision making. This could have influenced the group as a whole in terms of increased holistic thinking.

**Gyatral Rinpoche.** *Meditation, Transformation, and Dream Yoga*. Snow Lion, 2002.


From the publisher: “This inspiring introduction to Buddhist meditation provides essential background material on meditation—why we need to meditate, how to prepare for meditation, and how to enjoy a successful meditation session—and teaches twenty-one easy-to-follow meditations, which together form the entire Buddhist path to enlightenment . . .”


Abstract: So called primitive peoples of the world share a philosophy that human interaction via ceremony or ritual can affect the natural world. Is it possible to affect the
germination and growth of plants by imbuing them with an intent to stimulate or inhibit them? We conducted a double blind series of experiments to determine whether a process of meditation on the water (referred to as “treated”) given to a controlled planting of green peas or wheat would affect their germination. Peas were given water treated with stimulating intent. Statistical analysis was done using contingency table, Fisher’s test, and Mantel-Haenszel analysis. The germination rate of 504 seeds receiving treated water with stimulating intent was 60.3% compared to 51.8% for the 504 controls (p = 0.006, 0.047, 0.003 respectively). A similar experiment was conducted with wheat with the intent of inhibiting germination. The germination rate of 2970 wheat seeds receiving treated water with inhibitory intent was 70.7% versus 74.9% for 2970 controls (p < 0.001, 0.0001, 0.001 respectively). During the sixth run of the wheat (inhibition) experiment, the seedlings were harvested and individually weighed on the tenth day after planting to determine whether there was any difference in growth. The mass of the treated seedlings was statistically significantly lower (mean = 97 mg versus 106 mg for the controls) when compared by analysis of variance (p = 0.000056). We conclude that meditation upon the water supplied to green peas and wheat can affect their germination rates and growth.


“The fruition of a lifetime dedication to the study and interpretation of both Eastern and Western mystical symbolism, this book consummates insight into these themes first presented by Mr. Hall in *The Secret Teachings of All Ages*. Elucidating the use and meaning of mandalas or cosmic diagrams within the context of mystical experience, the role of disciplines is accentuated through which the mind can be attuned toward the realization of the aspects of Deity in all forms that exist. A rich variety of mystical symbolism is amassed together with illuminating keys to its inner significance.”

Contents: Meditation symbols; Meditation, the experience of Reality; The mandala as a symbol of the universe; The mandala as an internal mystery; The Lotus Sutra and its mandalas; Mandalas in Chinese Buddhism; Mandara of the two worlds; Mandara of the Pure Land Sect; Architecture as archetypal symbolism; The meaning of mandala diagrams for Western man; Mandalas in Western mysticism; The mystical symbols of Jacob Boehme; Mandalas in world government


From the publisher: ‘Stress is a leading cause of many health problems. Being unable to relax also significantly decreases our quality of life. We hear it all the time—you need to reduce stress and relax. Yet we are seldom instructed as to how to achieve this result. Meditation and [Kripalu] yoga instructor, Gary Halperin, has taught thousands of people how to meditate in order to take control of their lives. . . . [Through the] simple easy-to-
use format of *Feel Better Now . . . Meditation*, anyone can quickly learn to use classical meditation methods to reduce stress and enjoy life.

“This book is for anyone who wants to learn a method to relax, those who have never meditated and want to learn, as well as experienced meditators who want a new perspective on the practice. In one or a few sittings, you can learn how and why to meditate. You will learn that meditation is about practicing your focus on process without worrying about the results.”

Note: This book is recommended by several Kripalu Yoga teachers as a very clear and accessible introduction to meditation.

**Hanaki, Taiken.** Dhyana in the *Yoga-Sutra* and Buddhism. *Journal of Indian and Buddhist Studies* (Indogaku Bukkyogaku Kenkyu), Tokyo, Mar 1965, 13(2):601-604. [In Japanese.]

___________. Some practices of meditation (*dhyana*) in the Yoga system and Buddhism. *Nippon Bukkyo Gakukai Nempo* (The Journal of the Nippon Buddhist Research Association), Kyoto, Mar 1965, 30:131-146. [In Japanese.]


**Hanna, Fred J.** Meditation and psychopathology: Stabilizing the benefits. Was to have been published in *Journal of Humanistic Psychology*. (Contact: fhanna@jhu.edu)

**Hansa.** Scriptural guidance on meditation. Available online: http://www.ytoc.org/meditation.html. (Hindu tradition.)


Abstract: Prayer and meditation have been used as health-enhancing techniques for centuries. Their use has been investigated more recently in the context of more conventional, allopathic medical approaches. These studies, despite methodological limitations, show some promise for the formal application and integration of these techniques into western medical practice. Some potential benefits from meditation include reduced perceived stress and improvement in mild hypertension. Prayer appears to offer subjective benefit to those who pray; the effects of intercessory prayer on the health status of unknowing individuals requires more investigation.


“Concentrates on the health benefits of meditation practice, for instance in connection with hypertension, insomnia, and enhancement of the immune and circulatory systems. The author’s background is in Buddhist practice.”

Abstract: Growing scientific evidence, clinical experience, and community attitudes are encouraging a shift to more natural and holistic forms of therapy as alternatives or adjuncts to pharmacological approaches to a variety of conditions. Meditation and relaxation exercises have a wide range of applications but are especially useful in treating stress and related disorders. They are easily adapted to the general practice setting by adequately trained practitioners who have first hand experience of them. In this short article the practical and experiential aspects of such exercises are examined, which, combined with examining the scientific evidence, provide a much more complete understanding of their potential uses and therapeutic effects.

__________. *Meditation for Secondary and Tertiary Students* audiotape. Available from Quikopy Audio Recording Services, P.O. Box 361, Padstow, NSW 2211, Australia.


Abstract: [same issue of Clinical Psychology] propose an operational definition of mindfulness developed by a recent consensus panel. The group provides a solid empirical framework from which to develop measures of mindfulness, and they propose an exciting research agenda. We describe measurement development work from our research group that provides initial support for the proposed consensus definition and that examines mindfulness in relation to emotion regulation variables. We extend the discussion by describing how mindfulness can enhance the stabilizing and destabilizing aspects of therapeutic change, and we illustrate this in the context of our treatment program for depression.


Abstract: The inclusion of technologies drawn from spiritual and religious traditions into empirical clinical psychology is a positive step forward, but it also helps reveal problems in the technological model of treatment development. The technological model does not necessarily lead to a more coherent, innovative, and progressive discipline, which requires the development of more adequate theory, not merely more adequate technology. If technologies drawn from spiritual and religious traditions are to be included in modern scientific psychology, the field must be free to interpret and transform them theoretically, without being limited by their religious and spiritual past.

Abstract: There are scientific advantages to defining mindfulness in terms of the psychological processes involved. Doing so, however, necessarily uncouples mindfulness from any given technology, including meditation. Defining mindfulness in terms of the self-regulation of attention and a posture of acceptance seems progressive, but there are underlying philosophical attachments in the proposed definition that might limit its applicability if they are treated too rigidly.


Abstract: Understanding the processes and principles that underlie mindfulness is a needed step, because this method enters into the armamentarium of empirical clinical psychology. Mindfulness is closely related to several procedures, including acceptance, cognitive defusion, and exposure. Although each of these procedures seems to target different behavioral processes, they are all interrelated, because ultimately all of them target the domination of the literal and evaluative functions of human language and cognition. Because these methods are constructional, not eliminative, their rise may ultimately have a more profound impact on the field than is currently supposed.


On the importance of sitting in a comfortable posture for meditation rather than the “right” posture, and on students’ resistance to doing so.


PURPOSE: To determine whether practice of the Transcendental Meditation (TM) technique can affect medical expenses. DESIGN: The evaluation was a quasi experimental, longitudinal, cost-minimization study. SETTING: Province of Quebec, Canada. SUBJECTS: This study involved 1418 Quebec health insurance enrollees who practiced the TM technique compared with 1418 subjects who were randomly selected from enrollees of the same age, sex, and region. TM subjects had chosen to begin the technique prior to learning about and choosing to enter the study. MEASURES: This 14-year, pre- and postintervention study retrospectively assessed government payments to physicians for treating the TM and comparison groups. Other medical expense data for individuals were unavailable. Data were inflation-adjusted. For each subject, least squares regression slopes were calculated to estimate pre- and postintervention annual rates of change in payments. We compared the groups’ means and 1%, 5%, and 10% trimmed means (robust estimators) of the slopes. RESULTS: Before starting meditation, the yearly rate of increase in payments between groups was not significantly different (p
After commencing meditation, the TM group’s mean payments declined 1% to 2% annually. The comparison group's payments increased up to 11.73% annually over 6 years. There was a 13.78% mean annual difference (p = .0017). CONCLUSIONS: The results suggest that the TM technique reduced payments to physicians between 5% and 13% annually relative to comparison subjects over 6 years. Randomized studies are recommended.


Abstract: Using positron emission tomography (PET), measurements of the regional cerebral metabolic rate of glucose (rCMRGlc) are able to delineate cerebral metabolic responses to external or mental stimulation. In order to examine possible changes of brain metabolism due to Yoga meditation PET scans were performed in 8 members of a Yoga meditation group during the normal control state (C) and Yoga meditative relaxation (YMR). Whereas there were intraindividual changes of the total CMRGlc, the alterations were not significant for intergroup comparison; specific focal changes or changes in the interhemispheric differences in metabolism were also not seen; however the ratios of frontal vs. occipital rCMRGlc were significantly elevated (p less than 0.05) during YMR. These altered ratios were caused by a slight increase of frontal rCMRGlc and a more pronounced reduction in primary and secondary visual centers. These data indicate a holostic behavior of the brain metabolism during the time of altered state of consciousness during YMR.


Summary by Hindu Press International, 28 Jul 2001: “When 12 year-old Nikki Meyer visited the dentist to have a tooth filled, she used the meditation techniques she learned in class to relax. Nikki and her brother, Michael, 11, are among the children who attended the Introduction to Buddhism and Meditation for Children class at Vajradakini Buddhist Center last week. Instead of soccer camp or swimming lessons, children spent five mornings at the center learning about Buddhism. The class, open to ages 9 through 13, included meditation techniques, arts and crafts, teachings on love and compassion and how to overcome anger and jealousy. One morning’s activities began with the children reciting a mantra of compassion. The children then made prayer flags, carefully lettering their good wishes for the world on brightly colored felt . . .”


Contents: Breath Control: Reducing breath frequency, Rhythmical breathing, Zen meditation while walking (kinhin), Abdominal breathing, Counting breaths; Posture Control: Zen meditation in sitting posture, Meditation in a reclining posture, Stganding body control; Stability of Mind: Concentration, Attention transferral, Associational
method, Meditative contemplation; The Scientific Basis of the Zazen Method: Why Zazen [is] effective, Why Zazen strengthens the body


Abstract: The idea and practice of mindfulness has a long history in some of the world’s religions and is also articulated in a number of secular discourses. The therapeutic potential of mindfulness is now being recognized and is being researched in a diverse range of healthcare settings including mental health. Being mindful presupposes that individuals whose awareness is not impaired do have a choice in what phenomena they attend to and how they act. For the psychiatric nurse, understanding the idea and practice of mindfulness is useful for developing both trans-cultural awareness and to recognize that personal inattention could compromise care. In terms of mental health promotion, mindfulness is worthy of consideration as an important life skill. This paper explores the notion of mindfulness from a number of perspectives. The paper does not claim to have explored all the options. The Buddhist understanding of mindfulness provides the perspective for continuity within the paper and is used to illuminate any similarities and differences with the secular discourses being considered.


Huggins, Charnicia E. Meditation calms the mind, lengthens life: Study. Reuters, 2 May 2005. (See the entry in this bibliography for Robert Schneider, Charles Alexander, Frank Staggers, et al. for the citation for this study.)


“Rather than straining to quiet the mind in meditation, simply relax into the quiet that contains the mind.”

**The Institute for the Scientific Study of Meditation.** URL: http://members.aol.com/InstSSM/index.html.

**Iris, Keith F.** Mindfulness meditation and stress/anxiety. 28 Mar 1998. Article available online: http://www.behavior.net/cgi-bin/nph-display.cgi?MessageID=62&Top=-1&config=meditation&uid=nC1M8.user&new=0&adm=0.


**Jayanti, Sister.** *Practical Meditation: Spiritual Yoga for the Mind*. [Publisher unknown.]


Abstract: The concentration of 13 neutral and acidic plasma amino acids was measured before, during and after either 40 min of control relaxation or 40 min of the process known as transcendental meditation (TM). An electro-oculogram, electroencephalogram, and electromyogram were simultaneously monitored in these subjects. Increased phenylalanine concentration was noted during TM practice with no change during control relaxation; no difference between the groups of total time slept or sleep stage percent was observed. The stability of phenylalanine concentration in controls and lack of correlation of increased phenylalanine with sleep in the long-term practitioners seem to suggest a

Abstract: While for centuries a wakeful and tranquil state or experience variously called “samadhi,” “pure awareness,” or “enlightenment” had been said to be a normal experience and the goal of meditation in Vedic, Buddhist, and Taoist traditions, there was little known about this behavior until recently, when the practice of “transcendental meditation” (TM) became available for study in Western scientific laboratories. Derived from the Vedic tradition, TM is unique because it requires no special circumstances or effort for practice. Based upon a wide spectrum of physiological data on TM, we hypothesize that meditation is an integrated response with peripheral circulatory and metabolic changes subserving increased central nervous activity. Consistent with the subjective description of meditation as a very relaxed but, at the same time, a very alert state, it is likely that such findings during meditation as increased cardiac output, probable increased cerebral blood flow, and findings reminiscent of the “extraordinary” character of classical reports: apparent cessation of CO2 generation by muscle, fivefold plasma AVP elevation, and EEG synchrony play critical roles in this putative response.


Abstract: We have measured forearm oxygen consumption and blood flow changes during two wakeful rest behaviors. We have observed acute reduction of forearm respiration (28%) during an acute stylized rest state (TM) and a nonsignificant small decline (11%) during unstylized ordinary eyes-closed rest. These changes were not associated with significant change of forearm blood flow or glycolytic metabolism. Hence, forearm oxygen consumption decline was due almost solely to decreased rate of oxygen extraction. Small variation of forearm blood flow implies that little of the previous findings of increased nonrenal, nonhepatic circulation during TM or increased nonrenal circulation during ordinary rest can be accounted for by altered muscle blood flow, which therefore is consistent with possible increased cerebral blood flow. However, reduced muscle metabolism was a likely contributor to the forearm metabolic decline. The lack of coupling between metabolic and blood flow changes during TM indicates limitation of obligatory coupling between cardiovascular and metabolic function in the rest state of TM.

Abstract: Very little is known in depth of the biochemical and physiological changes induced at the cellular level by human behavioral states. For study of the physiology of behavior at this level, the erythrocyte may be useful, because it is readily available and its metabolism and metabolic control are comparatively well understood. In this report we describe a marked decline of red cell glycolytic rate induced by the transcendental meditation technique (TM). This decline was significantly correlated with decreased plasma lactate concentration and with relaxation as indicated by electrodermal response. The occurrence of sleep was not correlated with the metabolic changes. The observed lack of variation of blood pH, blood gases, glucose, and hematocrit in this behavior implies that the decrease of erythrocyte metabolism is not an epiphenomenon of respiratory change or substrate availability. Based upon further measurements indicating persisting alteration of the red blood cell, we suggest the possibility of attachment of a humoral agent(s) to the cell in the mechanism of this effect. This behavioral effect is unique, and the effector(s) responsible may increase our understanding of metabolic control of the erythrocyte and of TM.


Abstract: Cardiac output, renal and hepatic blood flows, arterial lactate concentration, and minute volume were measured before, during, and after 40 min of rest induced either by the practice known as “transcendental meditation” (TM) or by an ordinary eyes-closed rest-relaxation period. Two groups of normal young adults were studied: one group consisted of regular practitioners of TM and the other of similar individuals studied prior to learning this technique. Marked declines of renal blood flow were noted in both groups. Decline of hepatic blood flow, increased cardiac output, decreased arterial lactate, and minute volume were also recorded in the TM-induced rest period. These changes imply a considerable increase of nonrenal, nonhepatic blood flow during TM (44%) and, to a lesser extent, during rest (12%). Increased cerebral and/or skin blood flow is hypothesized to account for part of the redistributed blood flow in the practitioner.


Abstract: This thesis investigates the practice of meditation from these three distinct perspectives. Meditation practice as defined in this analysis includes both concentration meditation and mindfulness or awareness meditation as developed in Zen Buddhism.

Our examination of meditation begins with neuroscience. In the first chapter, we examine how neuroscience explains the construction of self and reality through processes of the brain. We follow the path of stimuli from the sense organs to the higher structures of the brain as this information is processed to form both our external reality as well as our internal sense of self. We then examine studies of the effect of the practice of meditation on these association processes of the brain, as researched by neuroscientists.
While neuroscience provides us with an objective understanding of how the brain functions during meditation, it is limited in providing us with an explanation of the subjective experience of meditation. In the second chapter, in order to gain an understanding of the subjective processes of the mind, we must turn to philosophy. Through phenomenology, we are provided with a similar sequential explanation of the construction of self and reality. We then examine how the practice of meditation affects these subjective experiences.

While phenomenology provides a more in-depth analysis of our subjective experience, it is limited to an abstract description of understanding self and reality. In the third chapter, we examine the experiential practice of meditation as outlined by practitioners of Zen. This explanation of meditative practice provides an understanding of the Buddhist non-dual view of reality as the ground out of which our objective and subjective understandings of self and reality arise.

Neuroscience, phenomenology, and Zen are three very different perspectives for examining reality. This thesis points to similarities in how each perspective understands the construction of self and reality, thus providing a deeper understanding of the practice as a whole. Previously, attempts to understand meditation were limited to either objective or subjective approaches; however this thesis combines both objective and subjective approaches to meditation as well as a more complete understanding of the non-dual perspective of Zen.


Abstract: The practice of mindfulness meditation was used in a 10-week Stress Reduction and Relaxation Program to train chronic pain patients in self-regulation. The meditation facilitates an attentional stance towards proprioception known as detached observation. This appears to cause an “uncoupling” of the sensory dimension of the pain experience from the affective/evaluative alarm reaction and reduce the experience of suffering via cognitive reappraisal. Data are presented on 51 chronic pain patients who had not improved with traditional medical care. The dominant pain categories were low back, neck and shoulder, and headache. Facial pain, angina pectoris, noncoronary chest pain, and GI pain were also represented. At 10 weeks, 65% of the patients showed a reduction of greater than or equal to 33% in the mean total Pain Rating Index (Melzack) and 50% showed a reduction of greater than or equal to 50%. Similar decreases were recorded on other pain indices and in the number of medical symptoms reported. Large and significant reductions in mood disturbance and psychiatric symptomatology accompanied these changes and were relatively stable on follow-up. These improvements were independent of the pain category. We conclude that this form of meditation can be used as the basis for an effective behavioral program in self-regulation for chronic pain patients. Key features of the program structure, and the limitations of the present uncontrolled study are discussed.


From a review by Kimberly Heinrichs at Amazon.com: “. . . In Stress Reduction, [Jon Kabat-Zinn] takes viewers to his Massachusetts Stress Reduction Clinic for demonstrations of sitting, prone, and standing meditation as well as testimonials from stressed-out patients who found some peace through his program. He also takes viewers on a hike through the woods, discusses Henry David Thoreau’s Walden Pond, and quotes James Joyce. He gets a little more down-to-earth with a study the clinic conducted augmenting ultraviolet light therapy with meditation for psoriasis patients. Kabat-Zinn’s manner is soothing, his attitude is one of gentle prodding, and the visuals are beautifully produced, making for a 51-minute chunk of serenity in a hectic world.”

From a review by Cliff Heegel at Amazon.com: “I am the director of a stress clinic in Memphis, Tennessee, that uses methods very similar to the ones shown in this tape. I use the tape as an educational tool to help persons begin to understand the basic orientation of
Mindfulness-Based Stress Reduction. The medical benefit of meditation and relaxation can be hard to sell to many patients. This tape helps patients understand the process we will be going through in stress reduction and does an excellent job of framing this work as being grounded deeply in medicine and science . . .”

__________, Mindfulness Meditation. 2-audiotape set.

__________, Mindfulness Meditation in Everyday Life. 2-audiotape set. Sound Horizons.


__________, Mindfulness-based interventions in context: Past, present, and future. Clinical Psychology: Science and Practice, 2003, 10(2). Author address: c/o Center for Mindfulness in Medicine, Health Care, and Society, University of Massachusetts Medical School, Shaw Building, 55 Lake Avenue North, Worcester, MA 01655.

Abstract: Baer’s review [same issue of Clinical Psychology] suggests that mindfulness-based interventions are clinically efficacious, but that better designed studies are now needed to substantiate the field and place it on a firm foundation for future growth. Her review, coupled with other lines of evidence, suggests that interest in incorporating mindfulness into clinical interventions in medicine and psychology is growing. It is thus important that professionals coming to this field understand some of the unique factors associated with the delivery of mindfulness-based interventions and the potential conceptual and practical pitfalls of not recognizing the features of this broadly unfamiliar landscape. This commentary highlights and contextualizes (1) what exactly mindfulness is, (2) where it came from, (3) how it came to be introduced into medicine and health care, (4) issues of cross-cultural sensitivity and understanding in the study of meditative practices stemming from other cultures and in applications of them in novel settings, (5) why it is important for people who are teaching mindfulness to practice themselves, (6) results from 3 recent studies from the Center for Mindfulness in Medicine, Health Care, and Society not reviewed by Baer but which raise a number of key questions about clinical applicability, study design, and mechanism of action, and (7) current opportunities for professional training and development in mindfulness and its clinical applications.


“Quieting the mind doesn’t have to mean shushing your many inner voices. By letting them have their say, you can discover the all-encompassing stillness of Big Mind.”


Kassner, Enid. Meditation: If you do it, it will come. Article available online: http://www.sunandmoonstudio.com/meditate.html.


BACKGROUND: Increasing numbers of patients seek information about complementary and alternative medicine (CAM) from their primary physicians. We sought to evaluate our 4-year old curriculum integrating mainstream and CAM care for common outpatient pediatric problems within a family medicine residency. DESIGN: Cross-sectional survey. METHODS: Subjects included current (1998) third-year residents and recent graduates from our program and nearby University of Washington-affiliated family medicine residency programs. The survey included items on training experiences, knowledge, attitudes and behavior regarding CAM. RESULTS: Among the 18 respondents from our program and 21 from comparison programs, the average age was 32 years and one-third were male. Over 80% of respondents felt that residencies should provide training in CAM. Substantial numbers of respondents from all programs recommended CAM therapies to patients in the past year. All respondents had recommended special diets and nutritional supplements; more than 50% recommended herbal remedies, acupuncture, meditation or progressive relaxation, massage or home remedies. Respondents from all groups had similar attitudes and knowledge about integrative medicine; those from the
intervention program were more likely than comparison respondents to agree that their residency training had prepared them to answer patients’ questions about CAM (50% vs. 19%, p = 0.04). CONCLUSIONS: Primary care residents increasingly seek training to answer patients’ questions and are already recommending a variety of CAM therapies. Primary care residencies need to develop and evaluate responsible, evidence-based curricula integrating mainstream and CAM therapies.


Abstract: The author reports two cases in which depersonalization occurred during the waking consciousness of individuals who had engaged in meditative techniques designed to alter consciousness. Psychiatrists should be aware of this phenomenon, as the number organizations in the “consciousness movement” is increasing, and should ask people manifesting depersonalization about any involvement in activities leading to altered states of consciousness. In some cases it might be appropriate to refer such patients to responsible groups that teach altered consciousness by meditation as an egosyntonic desirable state. The author cautions against the use of phenothiazines in cases where depersonalization is a prominent feature.

Kezwer, Glen Peter. Meditation, Oneness and Physics: A Journey through the Laboratories of Physics and Meditation. New Delhi, India: Sterling Publishers, 1995. Available from The Yoga Room and Meditation Center, 9 S.E. 5th Avenue, Delray Beach, FL 33483, or online at: http://www.transformationmeditation.com/other_items.htm.

From the book: “Chapter One presents the scientific, rational approach to meditation and analyses this technique in terms of the modern scientific method. It also recounts some personal experiences. Meditation is treated as a science which starts with the observation of the functioning of the human mind and reaches out towards the vision of Oneness where all of creation is seen as one unique existence. The last four chapters, two on quantum theory and two on relativity, deal with the parallels between modern physics and meditation. They show how the findings of these two sciences merge, with particular reference to the writings of the great physicists on the subject of Oneness. The last section in each chapter demonstrates how the discoveries of physics both corroborate those which come from meditation and serve as a basis upon which the findings of meditation can expand. The book also shows the reader how the practice of meditation can be incorporated into his or her own life to bring the benefits of good health, happiness, clear thinking, peace of mind, self-sufficiency and fearlessness.”

Glen Kezwer, Ph.D., is a “physicist who has been resident at a meditation institute in northern India for the past 20 years. During this time he has studied and practiced the
science of meditation, published articles, and taught meditation and its concomitant philosophy. He has made several speaking tours in India, Canada, the United States, and Europe, lecturing extensively on the scientific approach to meditation.”

**Khalsa, Dharma Singh, M.D.** Answers the question: Is it true that practicing meditation can help prevent, and even treat, Alzheimer’s disease? *Yoga Journal*, Sep/Oct 2000, p. 44.


Contents: Introducing Medical Meditation; Healing the Physical and Ethereal Bodies: How Medical Meditation Works; Scientific Research on Medical Meditation; Breath: The Kiss of God; Posture and Movement: Why Was I Born into This Body?; Mantra: The Tides and Rhythms of the Universe; Mental Focus: The Mind-Power Effect; Sadhana: Combining the Elements of Healing in Daily Practice; Medical Meditation Heals Body, Mind, and Spirit: Nicole’s Story; The Chakras and Their Dysfunctions; The First Chakra: The Seat of Survival; The Second Chakra: The Cradle of Creativity; The Third Chakra: Father Sun, Mother Earth; The Fourth Chakra: From Passion to Compassion; The Fifth Chakra: The Voice of Truth; The Sixth Chakra: The Path of the Soul; The Seventh and Eighth Chakras: Between Heaven and Earth


Abstract: [The] stress and strain of modern life can be reduced either by relaxation or meditation. Complete mental and physical relaxation is possible by ancient procedures like Yogic Meditation (YM) and Transcendental Meditation. Earlier studies on EEG during meditation, have shown dominant alpha pattern which is recorded symmetrically all over the cerebral hemispheres.

The study was conducted and the results showed the alpha frequency and voltage were significantly higher in meditators. Beta waves were significantly higher in control group. In either of the groups theta waves were not found. On photic stimulation no difference was observed in meditators and control group in EEG. There was a significant decrease in respiratory rate in meditators.

In conclusion, we found that meditation enhances self-confidence, sense of well-being, and empathy; improves cognitive functions as evidenced by increased alpha wave activity and its synchronization. It also increase mental concentration and reduces susceptibility to stress and strain. Thus meditation promotes complete health and well-being in an individual.

Abstract: Electroencephalographic patterns were studied in 30 normal healthy individuals practicing meditation and compared with 10 normal healthy controls not practicing meditation. In this study, we found prominent alpha wave activity and increase in its voltage in meditators as compared to controls. Meditators had significantly more alpha rhythm as compared to control group. Percentage of alpha waves were higher in persons performing meditation with good coherence which suggested good homogeneity, uniformity and increased orderliness of brain.


BACKGROUND: Accumulating evidence that stress contributes to the pathogenesis and expression of coronary heart disease has led to the increasing use of stress reduction techniques in its prevention and treatment. The most widely used and tested technique is transcendental meditation. OBJECT: To describe transcendental meditation and review research on its use in the treatment and prevention of coronary heart disease. DISCUSSION: Transcendental meditation shows promise as a preventive and treatment method for coronary heart disease. Transcendental meditation is associated with decreased hypertension and atherosclerosis, improvements in patients with heart disease, decreased hospitalisation rates and improvements in other risk factors including decreased smoking and cholesterol. These findings cannot be generalised to all meditation and stress reduction techniques as each technique differs in its effects. Further research is needed to delineate the mechanisms involved and to verify preliminary findings concerning atherosclerosis and heart disease and the findings of short term hypertension studies.


Abstract: Recent neuroimaging studies of brain function have led to an explosion of knowledge about psychological processes and states. In this paper, functional brain imaging studies of Yoga meditation are reviewed. Tantra-based meditations activate frontal and occipital cortical regions involved in focused, sustained attention and visual imagery. The overall pattern of brain activation in Tantra-based meditations is similar to that of self-hypnosis but different from that of sleep onset. Pure consciousness, the ultimate aim of Vedanta-based meditation, also activates frontal cortical areas regulating focused attention but deactivates sensory areas involved in imagery. Functional brain
imaging studies thus support the distinction between meditation with conceptual support, a distinction that appears throughout Yoga meditation texts. Brain imaging investigations also explain how Yoga therapy may be helpful to those with anxiety disorders by reducing activity in brain regions linked to the processing of negative emotions.

**King, Winston L.** *Theravada Meditation: The Buddhist Transformation of Yoga.* Delhi, India: Oscar Publications.


**Kjaer, T. W., C. Bertelsen, P. Piccini, D. Brooks, J. Alving, and H. C. Lou.**

Abstract: This is the first in vivo demonstration of an association between endogenous neurotransmitter release and conscious experience. Using 11C-raclopride PET we demonstrated increased endogenous dopamine release in the ventral striatum during Yoga Nidra meditation. Yoga Nidra is characterized by a depressed level of desire for action, associated with decreased blood flow in prefrontal, cerebellar and subcortical regions, structures thought to be organized in open loops subserving executive control. In the striatum, dopamine modulates excitatory glutamatergic synapses of the projections from the frontal cortex to striatal neurons, which in turn project back to the frontal cortex via the pallidum and ventral thalamus. The present study was designed to investigate whether endogenous dopamine release increases during loss of executive control in meditation. Participants underwent two 11C-raclopride PET scans: one while attending to speech with eyes closed, and one during active meditation. The tracer competes with endogenous dopamine for access to dopamine D2 receptors predominantly found in the basal ganglia. During meditation, 11C-raclopride binding in ventral striatum decreased by 7.9%. This corresponds to a 65% increase in endogenous dopamine release. The reduced raclopride binding correlated significantly with a concomitant increase in EEG theta activity, a characteristic feature of meditation. All participants reported a decreased desire for action during meditation, along with heightened sensory imagery. The level of gratification and the depth of relaxation did not differ between the attention and meditation conditions. Here we show increased striatal dopamine release during meditation associated with the experience of reduced readiness for action. It is suggested that being in the conscious state of meditation causes a suppression of cortico-striatal glutamatergic transmission. To our knowledge this is the first time in vivo evidence has been provided for regulation of conscious states at a synaptic level.


Complementary therapies and healing practices have been found to reduce stress, anxiety, and lifestyle patterns known to contribute to cardiovascular disease. Promising therapies include imagery and hypnosis, meditation, yoga, tai chi, prayer, music, exercise, diet, and use of dietary supplements. Many of these complementary approaches to healing have been within the domain of nursing for centuries and can readily be integrated into the care of patients with cardiovascular disease. While individual complimentary modalities hold considerable merit, it is critical that the philosophy underlying these therapies—caring, holism, and harmony—also be understood and honored. (c)2002 CHF, Inc.


___________. *The Yoga of Meditation*. The Divine Life Society.


Abstract: Frontal midline theta rhythm (Fm theta), recognized as distinct theta activity on EEG in the frontal midline area, reflects mental concentration as well as meditative state or relief from anxiety. Attentional network in anterior frontal lobes including anterior cingulate cortex is suspected to be the generator of this activity, and the regulative function of the frontal neural network over autonomic nervous system (ANS) during cognitive process is suggested. However no studies have examined peripheral autonomic activities during Fm theta induction, and interaction of central and peripheral mechanism associated with Fm theta remains unclear. In the present study, a standard procedure of Zen meditation requiring sustained attention and breath control was employed as the task to provoke Fm theta, and simultaneous EEG and ECG recordings were performed. For the subjects in which Fm theta activities were provoked (six men, six women, 48% of the total subjects), peripheral autonomic activities were evaluated during the appearance of Fm theta as well as during control periods. Successive inter-beat intervals were measured from the ECG, and a recently developed method of analysis by Toichi et al. (J. Auton. Nerv. Syst. 62 (1997) 79-84) based on heart rate variability was used to assess cardiac sympathetic and parasympathetic functions separately. Both sympathetic and parasympathetic indices were increased during the appearance of Fm theta compared with control periods. Theta band activities in the frontal area were correlated negatively with sympathetic activation. The results suggest a close relationship between cardiac autonomic function and activity of medial frontal neural circuitry.

Kumoi, Shozen. Dhyana and samadhi. Buddhist Seminar (Otani University, Kyoto), May 1976, no. 23, pp. 1-23. [In Japanese.]


LaFrance, Siona. Om, sweet om: Daily meditation can improve your health by helping you to relax and relieving the stress that breaks your body down. The Times-Picayune, 23 Jun 2005.


Sit up & take note: If you’re having difficulty meditating because of back pain, you could be sitting incorrectly. *Yoga Journal*, Jul/Aug 2000, pp. 74-77.

**Lazar, S. W., G. Bush, R. L. Gollub, G. L. Fricchione, G. Khalsa, and H. Benson.**

Meditation is a conscious mental process that induces a set of integrated physiologic changes termed the relaxation response. Functional magnetic resonance imaging (fMRI) was used to identify and characterize the brain regions that are active during a simple form of meditation. Significant (p<10(-7)) signal increases were observed in the group-averaged data in the dorsolateral prefrontal and parietal cortices, hippocampus/parahippocampus, temporal lobe, pregenual anterior cingulate cortex, striatum, and pre- and post-central gyri during meditation. Global fMRI signal decreases were also noted, although these were probably secondary to cardiorespiratory changes that often accompany meditation. The results indicate that the practice of meditation activates neural structures involved in attention and control of the autonomic nervous system.


“As a yoga teacher, I am passionate about yoga and have been fortunate to share this passion with many students over the past 20 years. I have been a student of Tibetan Buddhism for more than 10 years and it has been a natural evolution for the two lineages to merge in my teaching. Yoga and Buddhism offer insights and experiences that complement each other and together complete a basic homework assignment for human beings: What do I do with this body and this mind?”

Answers the question: “When I try to meditate, I find I am still thinking about my day. Shouldn’t I be looking more inward, without outside thoughts? How can I accomplish this?” *Yoga Journal*, Jan/Feb 2003, p. 40.


Abstract: Multichannel EEG of an advanced meditator was recorded during four different, repeated meditations. Locations of intracerebral source gravity centers as well as Low Resolution Electromagnetic Tomography (LORETA) functional images of the EEG “gamma” (35-44 Hz) frequency band activity differed significantly between meditations. Thus, during volitionally self-initiated, altered states of consciousness that were associated with different subjective meditation states, different brain neuronal populations were active. The brain areas predominantly involved during the self-induced meditation states aiming at visualization (right posterior) and verbalization (left central) agreed with known brain functional neuroanatomy. The brain areas involved in the self-induced, meditational dissolution and reconstitution of the experience of the self (right fronto-temporal) are discussed in the context of neural substrates implicated in normal self-representation and reality testing, as well as in depersonalization disorders and detachment from self after brain lesions.


“. . . This book, the first of its kind for young people, explains the different methods and what they do for you—mentally, physically, and spiritually. *Meditation for Young People* takes the mystery out of TM, est, zazen, yoga and other popular techniques. With simple diagrams and with descriptions of what you experience at each stage . . .”


Abstract: Self-transcendence has been hypothesized to be a critical component of wisdom (Curnow, 1999) and adaptation in later life (Tornstam, 1994). It reflects a decreasing reliance on externals for definition of the self, increasing interiority and spirituality, and a greater sense of connectedness with past and future generations. The Adult Self-Transcendence Inventory was administered to 351 individuals along with the NEO-FFI Personality Scale (McCrae & Costa, 1989). A principal axis factor analysis identified two factors: self-transcendence and alienation. The relationships between self-transcendence and neuroticism, openness to experience, extraversion, and agreeableness were significant, although modest, suggesting that self-transcendence cannot be accounted for in terms of positive personality traits alone. As expected, a multiple regression analysis indicated that self-transcendence was negatively related to neuroticism and positively related to meditation practice. The present study appears to lend support to the construct of self-transcendence.

Concluding paragraph of article: The present study offers support for the relevance of Habermas’ emancipatory knowledge constitutive interest to aging and adult development. A substantial body of evidence suggests that regular meditation has a strong relationship to positive health outcomes, self-transcendence, and overall well-being (Andresen, 2000). The evidence points to the possibility that self-transcendence itself may be a major contributor to the changes in physiological and psychological states experienced by practitioners.


“Through meditation practice, we can appreciate how well our body works. We notice our body and actions have an innate elegance, dignity, and uprightness. This is the experience of basic healthiness. We can maintain our dignity in both illness and health.”


“One considered outside the mainstream, today more insurers are paying for meditation, both as a form of medication and as preventive medicine in hospitals, businesses and community centers around the country.”

Chapter contents: Meditation in medicine, neuroscience, and psychiatry; From meditation to psychotherapy: The bridge of hypnotic learning; From trauma to enrichment: Stress, learning, and the brain; Meditation and psychotherapy: Two methods of enriched learning; Research, teaching, and clinical uses of meditation, References


Abstract: The aim of the present study was to examine whether the neural structures subserving meditation can be reproducibly measured, and, if so, whether they are different from those supporting the resting state of normal consciousness. Cerebral blood flow distribution was investigated with the 15O-H20 PET technique in nine young adults, who were highly experienced yoga teachers, during the relaxation meditation (Yoga Nidra), and during the resting state of normal consciousness. In addition, global CBF was measured in two of the subjects. Spectral EEG analysis was performed throughout the investigations. In meditation, differential activity was seen, with the noticeable exception of V1, in the posterior sensory and associative cortices known to participate in imagery tasks. In the resting state of normal consciousness (compared with meditation as a baseline), differential activity was found in dorso-lateral and orbital frontal cortex, anterior cingulate gyri, left temporal gyri, left inferior parietal lobule, striatal and thalamic regions, pons and cerebellar vermis and hemispheres, structures thought to support an executive attentional network. The mean global flow remained unchanged for both subjects throughout the investigation (39+/-5 and 38+/-4 ml/100 g/min, uncorrected for partial volume effects). It is concluded that the (H2)15O PET method may measure CBF distribution in the meditative state as well as during the resting state of normal consciousness, and that characteristic patterns of neural activity support each state. These findings enhance our understanding of the neural basis of different aspects of consciousness.


Abstract: Practitioners understand “meditation,” or mental training, to be a process of familiarization with one’s own mental life leading to long-lasting changes in cognition and emotion. Little is known about this process and its impact on the brain. Here we find that long-term Buddhist practitioners self-induce sustained electroencephalographic high-amplitude gamma-band oscillations and phase-synchrony during meditation. These electroencephalogram patterns differ from those of controls, in particular over lateral
frontoparietal electrodes. In addition, the ratio of gamma-band activity (25–42 Hz) to slow oscillatory activity (4–13 Hz) is initially higher in the resting baseline before meditation for the practitioners than the controls over medial frontoparietal electrodes. This difference increases sharply during meditation over most of the scalp electrodes and remains higher than the initial baseline in the postmeditation baseline. These data suggest that mental training involves temporal integrative mechanisms and may induce short-term and long-term neural changes.


On learning to meditate.


On beginning meditation and the saying of a simple mantra.


Abstract: Objectives: This exploratory study is the first systematic outcome evaluation to examine the effects of an 8-week meditation-based program in mindfulness in a German sample. Design: Twenty-one (21) participants with chronic physical, psychologic, or psychosomatic illnesses were examined in a longitudinal pretest and post-treatment design with a 3-month follow-up. Outcome Measures: Both quantitative and qualitative data were gathered. Emotional and general physical well-being, sense of coherence, overall psychologic distress, and satisfaction with life were measured with standardized instruments. Results: Overall, the interventions led to high levels of adherence to the meditation practice and satisfaction with the benefits of the course, as well as effective and lasting reductions of symptoms (especially in psychologic distress, well-being, and quality of life). Changes were of moderate-to-large effect sizes. Positive complementary effects with psychotherapy were also found. Conclusions: These findings warrant controlled studies to evaluate the efficacy and cost effectiveness of mindfulness-based stress reduction as an intervention for chronic physical and psychosomatic disorders in Germany.

Malloy, Jim. Meditation: Can sitting with your eyes closed improve your quality of life? Article available online: http://www.selfgrowth.com/articles/Malloy1.html. (Discusses health benefits.)
Mangla, Divay. Meditation is not free from side-effects. Article available from Dr. Ananda Balayogi Bhavanani, ICYER, yognat2001@yahoo.com.

Some of the negative effects of meditation that have been noted in different scientific studies:

- Boredom, impaired reality testing
- Less motivation in life
- Relaxation-induced mild-to-severe anxiety
- Paradoxical increases in mental tension
- Confusion and disorientation
- Feeling of being “spaced out”
- Depression, increased negativity, being more judgmental
- Feeling addicted to meditation
- Psychosis-like symptoms
- Appearance of hidden memories from the past, such as incest, rejection and abandonment
- Other adverse effects are uncomfortable bodily sensations, feelings of guilt, grandiosity, elation, destructive behavior and suicidal feelings


Abstract: Intravenous drug users often have many health conditions in addition to their drug addiction, yet may be isolated from conventional sources of care. They have never before been examined for their use of complementary and alternative medicine (CAM) therapies. Our purpose was to study the prevalence and predictors of CAM use among persons with a history of intravenous drug use through a cross-sectional survey of intravenous drug users examining their utilization of health services, including CAM therapies. A total of 548 persons with a history of intravenous drug use, recruited from a needle-exchange program and a methadone maintenance clinic, both in Providence, Rhode Island, participated. Overall prevalence of any CAM use in the past 6 months, frequency of use of individual named CAM therapies and domains, and demographic and clinical characteristics associated with CAM users, reasons for CAM use and self-perceived effectiveness of CAM were also measured. Of the 548 participants, 45% reported use of at least one CAM therapy. The top three therapies—religious healing, relaxation techniques, and meditation—were all from the mind-body domain. Having a higher education and lower self-rated health were the two strongest predictors of CAM use, followed by having a regular doctor or clinic, being white and younger. There was a high level of self-perceived effectiveness of CAM therapies (4.1 on a scale of 1-5), and CAM users were likely to use CAM for reasons related to their addiction.

Mann, Denise. Meditation does ease stress: Stressed out people have fewer complaints after learning “mindfulness.” Article available online: http://content.health.msn.com/content/article/1728.83226.
“Of 62 ‘stressed-out’ people, those who participated in an eight-week mindfulness program reported less psychological distress, less stress from daily hassles, and fewer medical symptoms than those who did not participate in the training. The program included one 2.5-hour class each week, one eight-hour retreat, and training in four methods of meditation, general yoga postures, and other stress-busting techniques.

“This is the first study to look at meditation and stress-reduction techniques in people who reported high stress levels, but did not have a diagnosed psychiatric disorder.”

The study was conducted by IAYT member Kimberly Williams, Ph.D., a research assistant professor in the department of community medicine and director of the Program for Integrative Medicine at West Virginia University in Morgantown.


From the review: ” It must be made clear at the outset that Buddhism in a Foreign Land is not a meditation manual, but a collection of Dharma talks intended primarily to introduce a nonspecialized Western audience to the Buddha’s teaching—and specifically to insight meditation—in straightforward, nontechnical language. This it does very successfully, covering in an admirably clear manner the fundamentals of the Buddhadharma, with particular attention (as the title of the book suggests) to the challenges of its enculturation in the Western world.”


BACKGROUND: While many general practitioners perceive meditation as an acceptable, even mainstream, health care strategy, it is paradoxically a poorly understood discipline.
OBJECTIVE: To define meditation, outline the broad types of meditation and give an overview of the extent and validity of available evidence for its efficacy.
DISCUSSION: The basic question of what constitutes meditation and what separates it from relaxation therapy has been an impediment to formulating quality studies in order to research meditation techniques. Examining the literature using evidence based criteria reveals that, while meditation does appear to have therapeutic potential, there is a great need for further research before definitive conclusions can be made. Researchers have yet to systematically compare different techniques of meditation to compare their profiles.

Maritza. Meditation for Beginners DVD. Gaiam.

“Relaxing and reducing stress through transcendental meditation may reduce artery blockage and the risk of a heart attack and stroke.”


Abstract: Psychotherapeutic interventions containing training in mindfulness meditation have been shown to help participants with a variety of somatic and psychological conditions. Mindfulness-based cognitive therapy (MBCT) is a meditation-based psychotherapeutic intervention designed to help reduce the risk of relapse of recurrent depression. There is encouraging early evidence from multi-centre randomized controlled trials. However, little is known of the process by which MBCT may bring therapeutic benefits. This study set out to explore participants’ accounts of MBCT in the mental-health context. Seven participants were interviewed in two phases. Interview data from four participants were obtained in the weeks following MBCT. Grounded theory techniques were used to identify several categories that combine to describe the ways in which mental-health difficulties arose as well as their experiences of MBCT. Three further participants who have continued to practise MBCT were interviewed so as to further validate, elucidate and extend these categories. The theory suggested that the preconceptions and expectations of therapy are important influences on later experiences of MBCT. Important areas of therapeutic change (“coming to terms”) were identified, including the development of mindfulness skills, an attitude of acceptance and “living in the moment.” The development of mindfulness skills was seen to hold a key role in the development of change. Generalization of these skills to everyday life was seen as important, and several ways in which this happened, including the use of breathing spaces, were discussed. The study emphasized the role of continued skills practice for participants' therapeutic gains. In addition, several of the concepts and categories offered support to cognitive accounts of mood disorder and the role of MBCT in reducing relapse.


Abstract: This paper is about teachers and primary school pupils who have led or taken part in meditation classes at school. It discusses their perceptions of the relationship between meditation and learning. Three different categories of perceived benefit are
examined: readiness for learning, enhanced creative expression, and spiritual development. After this a case is made for the use of experiential learning models as a structure for enhancing the benefit gained through meditation. The paper concludes with some observations about the potential of meditation in the school setting. Much of what is said could apply to the secondary setting.


Abstract: I hypothesize that people engage in religious practices, in part, because such practices activate the frontal lobes. Activation of the frontal lobes is both intrinsically rewarding and necessary for acquisition of many of the behaviors that religions seek to foster, including self-responsibility, impulse and emotion modulation, empathy, moral insight, hope, and optimism. Although direct tests of the hypothesis are as yet nonexistent, there is reasonably strong circumstantial evidence (reviewed herein) for it. Recent brain-imaging studies indicate greater anterior activation values and increased blood flow to frontal sites during prayer and meditation. Regular prayer is positively correlated with better overall mental health. Religiosity is correlated with higher levels of self-monitoring, empathy, and moral insight and other positive behaviors and negatively correlated with depression and impulsive and risky behaviors. Independent data show that self-monitoring, empathy, hope, and moral insight are all selectively associated with intact frontal function, whereas depression, impulsiveness, and drug and alcohol abuse are associated selectively with frontal dysfunction. If religious practices do indeed preferentially activate and stimulate development of the frontal lobes, (a) religious practices should be considered as possible adjuncts for some patients in treatment for mental health disorders, and (b) the frontal lobes (rather than the temporal lobes) should be considered the major brain site that supports the core components of religious experience.

**McRae, Sudhakar Ken.** *Sadhana: The Daily Practice of Meditation* CD. Peace Of Mind Center for Yoga and Meditation, 2000.

From the publisher: ‘Featuring two of India’s most powerful meditation techniques—Vipassana and Japa, this CD is the perfect introduction to the practice of meditation. Very accessible for beginners and a valuable resource for the daily practitioner, it begins with a brief, entertaining lecture which includes a description of the practice and introduces the benefits of meditation. The CD also features very simple sitting instructions, guided meditation experiences and programmable sequences offering practices in lengths from 12 to 48 minutes. The compact disc leads the user to discover what meditation is, why to do it, and how to do it.'
“Sudhakar Ken McRae has over 25 years of experience studying, practicing and teaching yoga and meditation. Former director of Daily Yoga Sadhana at Kripalu Center, he has been the yoga consultant for articles on stress-management in New Age Journal and Redbook magazines, as well as the creator of a yoga demonstration for a CNN TV documentary. He is a 500-hour, nationally certified member of the Yoga Alliance. Known for his meticulous, balanced, good-humored instruction, Sudhakar’s teaching combines the precision of the Iyengar tradition with the heart-centered, meditative aspects of Kripalu yoga.”

Medigrace: Medical applications of yoga. URL: http://www2.zerosetup.com/~medigrace.


On using relaxation and guided imagery to assist with weight loss.

Meditation—Two Complete Sessions DVD. Yoga Zone, 1998.


“Using meditation over a longer period of time can have an enduring beneficial effect on your brain activity. One who meditates regularly experiences a lasting relaxing effect in daily life.”


“Usually described as a technique for self-improvement and even healing, meditation is generally presented as suitable for everyone. Just as some people are allergic to penicillin, however, some people react badly to meditation. These harmful effects are not limited to one form of meditation, or to long retreats rather than short sessions, and have been known for 30 years. Adverse health effects include psychologic and physical problems ranging from muscle spasms to hallucinations, facial tics, insomnia, spacing out, anxiety, and even psychotic breakdowns. These effects have now been shown to have a physiologic basis, as blood flow to the brain is redistributed and brain neurotransmitter release alters . . .”


As reported by Hindu Press International, 6 Mar 2002: “Scientists investigating the effect of the meditative state on Buddhist monks brains have found that portions of the organ previously active become quiet, while pacified areas become stimulated. Dr Andrew Newberg, a radiologist at the University of Pennsylvania, told BBC World Service’s Discovery program: ‘I think we are poised at a wonderful time in our history to be able to explore religion and spirituality in a way which was never thought possible.’ Using a brain imaging technique, Newberg and his team studied a group of Tibetan Buddhist monks as they meditated for approximately one hour. When they reached a transcendent high, they were asked to pull a kite string, releasing an injection of a radioactive tracer. By injecting a tiny amount of radioactive marker into the bloodstream of a deep meditator, the scientists saw how the dye moved to active parts of the brain. Later, when the subjects finished meditating, the regions were imaged and the meditative state compared with the normal waking state. ‘There was an increase in activity in the front part of the brain, the area that is activated when anyone focuses attention on a particular task,’ Dr Newberg explained. Also, a notable decrease in activity in the back part of the brain, recognized as the area responsible for orientation, reinforced the general suggestion that meditation leads to a lack of spatial awareness.”


Topics covered: What is mindfulness meditation? How does it help with stress?

**Meditation course at Ma Niketan Home for Children, Mumbai.** Article available online: http://www.vri.dhamma.org/archives/dsniketanrpt.html.

**Meditation may boost immune system.** Article available online: http://healthy.net/scr/news.asp?id=6656.

“Previous studies have shown that meditation helps reduce anxiety and stress. However, a study conducted by researchers from the University of Wisconsin-Madison is the first to suggest that it may also have positive biological effects on the body’s ability to fight infection and disease.

“Led by Dr. Richard Davidson, Vilas Professor of psychology and psychiatry at the university, the researchers conducted a 16-week study on 41 participants to investigate the physiological effects of ‘mindfulness meditation.’ This form of meditation involves intensely focusing the attention on thoughts and feelings as they occur, noting their existence but refraining from judging or acting on them. It is intended to deepen awareness of the present, develop attention-focusing skills and cultivate positive emotions.”
“The participants in the study were divided into two groups. The first group of 25 received mindfulness meditation training consisting of a weekly class, an hour of home practice for six days a week and a one 7-hour retreat during the course of the study. The control group, which contained 16 people, did not receive meditation training until after the study was completed. Over the study period the researchers measured levels of electrical activity in the frontal area of the brain - increased activity in the left side of which is associated with optimistic and positive emotions.

“The participants also received a flu shot over the course of the study then blood tests were examined to measure levels of antibodies produced in response to the vaccine. The researchers found that the meditation group exhibited increased activity in the left side of the frontal part of the brain, indicating lower anxiety levels and a more positive emotional state.

“In addition, although both groups had increased antibody levels in response to the vaccine, the meditation group had significantly larger increases at four and eight weeks, after receiving the shots, than the control group.

“Although our study is preliminary and more research clearly is warranted,’ said Dr. Davidson, ‘we are very encouraged by these results.’

“The research team is now planning to study the effects of meditation on patients with particular illnesses.

“The research will appear in a forthcoming edition of the journal *Psychosomatic Medicine.*”

*Meditation versus hypnosis.* A thread in the Meditation in Psychotherapy online forum. URL: http://www.behavior.net/cgi-bin/ls2.cgi?config=meditation&uid=nC1M8.user&new=0.


**Menzie, Andrea.** Meditation earns high marks: Preteens who learn to quiet their minds enjoy greater self-esteem, a recent study has found. *Yoga Journal,* Jan/Feb 2004, p. 29.

From the article: A University of Michigan pilot study suggests that student who practice Transcendental Meditation (TM) at school may be happier and have higher self-esteem than their counterparts who do not meditate. The study, the first to involve African American children and TM, examined 83 sixth graders at two charter schools in the Detroit area. Students were given an individual mantra and taught how to meditate using it. They practiced twice during the school day—10 minutes at the beginning and end of each day. Students in the control group did not meditate at all. Four months after the participants learned TM, researchers scored them and the nonmeditating students on several scales, including loneliness, emotional competence, self-esteem, positive affectivity, anxiety, and aggression. The meditators scored higher in the ares of emotional
competence, self-esteem, and positive affectivity, though there was no significant difference between the groups in the other areas.


**Meyers, Esther.** Answers the questions: “What areas do I need to work on to be able to sit in simple cross-legged position while maintaining an erect spine?” *Yoga Journal*, Article available online: http://www.yogajournal.com/practice/648_1.cfm?ctsrc=nlv64.


From a review by Phil Catalfo in *Yoga Journal*, Mar/Apr 2003, p. 170: “... the son and dharma heir of Chögyam Trungpa offers an unpretentious, readable dissertation on how to use meditation—which he describes as the moment when we ‘slow down and begin to look at the pattern of our life’—in order to transform the ‘untrained,’ ‘bewildered’ mind into a ground of ‘peaceful abiding.’”

**Moffitt, Phillip.** Lost in doubt? Inviting the many voices of doubt to come sit with you on the meditation cushion can help you better understand them. *Yoga Journal*, Dec 2002, pp. 67-74.

**Monks of the Ramakrishna Order.** *Meditation*. Mylapore, Madras, India: Sri Ramakrishna Math, [n.d.].

Contents: Living the mature way; Before you sit in meditation; The yoga concentration; Lessons in meditatin; The Science of mantra or the sacred word; The repetition of the
name of God; Japa in different traditions; The development of consciousness; The mechanics of meditation; Obstacles and aids to meditation; The trained mind; Meditation in monism; The way of meditation; Guided meditation


Morgan, John, with medical adviser Steven A. Shoop, M.D. Mantras become mainstream medicine. USA Today, Health section, 9 Aug 2000.

“‘Meditation is only one of many techniques for evoking the relaxation response,’ offers [Herbert] Benson. ‘Breathing exercises, repetitive prayer, yoga, even the rosary activate our body’s relaxation response. And they all work equally well—some better than others depending on the individual.’”


From the publisher: “This book is designed to be a guidebook for the initiates as well a seasoned practitioners of Yoga meditation, and approaches the subject from the comprehensive standpoints of physiology, neurophysiology, psychology, parapsychology, philosophy and religion. People who practice other forms of Eastern of Western meditation should also benefit from this book, because it clearly demarcates the phenomena that characterize each stage of meditational practice and hence serves as a yardstick for their progress in spiritual growth.”


Contents: Swami Muktananda and the Siddha lineage; Meditate on the Self; Shaktipat; Knowledge: The object of meditation; How to deal with the mind; Mantra; Asana; Pranayama; The process of meditation; Siddha meditation; Meditation instructions; Looking within (by Gurumayi Chidvilasananda); Siddha meditation in our daily life; Siddha meditation ashrams and centers


Murphy, Sean. Passing thoughts: Having thoughts arise during meditation is normal, but are you clinging to these thoughts rather than simply watching them drift by? *Yoga Journal*, Jan/Feb 2003, pp. 141-144. Article available online: http://www.yogajournal.com/meditation/848_1.cfm?ctsrc=nlv64.


Abstract: We tested the hypothesis that individuals who frequently practice meditation within another culture whose assumptions explicitly endorse this practice should exhibit more frequent and varied experience associated with complex partial epilepsy (without the seizures) as inferred by the Personal Philosophy Inventory and Roberts’ Questionnaire for the Epileptic Spectrum Disorder. 80 practitioners of Dharma Meditation and 24 university students in Thailand were compared with 76 students from first-year courses in psychology in a Canadian university. Although there were large significant differences for some items and clusters of items expected as a result of cultural differences, there were no statistically significant differences between the two populations for the proportions of complex partial epileptic-like experiences or their frequency of occurrence. There were no strong or consistent correlations between the history of meditation within the sample who practiced Dharma meditation and these experiences. These results suggest complex partial epileptic-like experiences may be a normal feature of the human species.

Abstract: 52 undergraduates who had volunteered to receive meditation training were placed into either high or low time-urgency groups based on their scores on Factor S of the Jenkins Activity Survey. Subjects then either received training in Clinically Standardized Meditation followed by 3 1/2-wk. practice or waited for training during that period. Analyses of scores on a time-estimation task and of self-reported hostility during an enforced waiting task indicated that meditation significantly altered subjects’ perceptions of the passage of time and reduced impatience and hostility resulting from enforced waiting.


Nagarkatti, Shantanu. Does meditation have detrimental effects? Article available online: http://www.behavior.net/cgi-bin/nph-display.cgi?MessageID=173&Top=172&config=meditation&uid=nC1M8.user&new=0&adm=0.


__________. A good dose of dhamma: For meditators when they are ill. 3 Sep 1965. Article available online: http://www.enabling.org/ia/vipassana/Archive/N/Nanayon/meditatingWhenIllNanayon.html.


National Conference on Stress, Meditation, and the Brain. Maharishi University of Management, Fairfield, Iowa, Center for the Brain, Consciousness, and Cognition, 18

“Academic pressures, binge drinking, poor diet, sleep deprivation, and substance abuse are facts of life at most colleges and universities. Recent brain research documents how this college experience can take a terrible toll on a student’s brain—and what can be done to reverse the damage and develop the total potential of the brain.”

“Stressful experiences lead to dysfunctions of the prefrontal cortex—critical areas regulating judgment, planning, decision making, moral reasoning, and sense of self. This conference [showcased] new findings on the effects of stress on brain functioning and the results of more than 30 years of research on the Transcendental Meditation technique on reversing the debilitating effects of stress and promoting total brain functioning for the full expression of human development.”


Abstract: Sleep and meditation are both physiological conditions in which peripheral sensory input is voluntarily reduced, but sensory perception of internally generated information continues. . . . the two conditions differ in the level of awareness retained.

**Nelson, Marcia Z.** *Come and Sit: A Week Inside Meditation Centers.* Woodstock, Vt.: Skylight Paths.


Abstract: This study measured changes in regional cerebral blood flow (rCBF) during the complex cognitive task of meditation using single photon emission computed tomography. Eight experienced Tibetan Buddhist meditators were injected at baseline with 7 mCi HMPAO and scanned 20 min later for 45 min. The subjects then meditated for 1 h at which time they were injected with 25 mCi HMPAO and scanned 20 min later for 30 min. Values were obtained for regions of interest in major brain structures and normalized to whole brain activity. The percentage change between meditation and baseline was compared. Correlations between structures were also determined. Significantly increased rCBF (P<0.05) was observed in the cingulate gyrus, inferior and
orbital frontal cortex, dorsolateral prefrontal cortex (DLPFC), and thalamus. The change in rCBF in the left DLPFC correlated negatively (P<0.05) with that in the left superior parietal lobe. Increased frontal rCBF may reflect focused concentration and thalamic increases overall increased cortical activity during meditation. The correlation between the DLPFC and the superior parietal lobe may reflect an altered sense of space experienced during meditation. These results suggest a complex rCBF pattern during the task of meditation.


Abstract: This paper describes phosphenes observed by a medical writer during the onset and evolution of a partial seizure with an ecstatic emotional accompaniment. This seizure was inadvertently induced by the author’s attempt to practice meditation during the early morning hours while in a sleep-deprived condition. A neurological workup did not find evidence of epileptic lesions or interictal activity. The phosphenes sequence matches descriptions of light visions in the ancient Vedic scriptures and in yoga meditation texts of the Hindu and Tibetan Buddhist traditions, suggesting the possibility of a common etiology. Analysis of the phosphenes spatiotemporal characteristics in light of recent research in the neuroscience of sleep, vision, and epilepsy suggests that the images were generated by the following sequence of neural events: (1) activation of slow wave sleep rhythm oscillators in corticothalamocortical circuits (CTC); (2) destabilization of sleep rhythm oscillators, triggering emergence of hypersynchronous spike-waves and fast runs in CTC circuits; (3) a build-up of rhythmica activity in the right hippocampus (H) due to the synergistic interaction of synchronous sharp waves, high-frequency ripples, and afferent visual stimuli; (4) an outbreak of paroxysmal discharges in the contralateral left H; and, (6) precipitation of a bilateral mesotemporal seizure.


Contents: Jung, Meditation, and the West; What is Meditation?; The Psychology of Zen; Can West Meet East?; Meditation and Alchemy; Wilber on Jung: A Critique; Cleary, Juny, and *The Secret of the Golden Flower*

_________. *Zen meditation as a way of individuation and healing,* *Psychological Perspectives,* Summer 1998, No. 37.


Contents: The lives of the Buddha; The foundations of Buddhism; Preparation for meditation; Contemplative techniques of Hinayana; Contemplative techniques of Mahayana; Contemplative techniques of Vajrayana; Contemplative techniques of Ch’ an (Zen); Map of the spread of Buddhism; The foundations of Taoism; Taoist contemplative techniques

**Omkarananda.** *Getting to know the silence . . . meditation and Yoga from the tantric tradition at Håå Course Center in South Sweden.* *Bindu,* no. 11, pp. 26-27.


_________. *Meditation: The First and Last Freedom.*


On the benefits of meditation for heart patients at Columbia Presbyterian’s Heart Institute in New York, for which Dr. Oz is the director. Every patient who comes to Columbia Presbyterian Medical Center for a heart operation is offered an optional program of massage, Yoga, and meditation. Mechanisms of benefits are explained and various research studies are cited.

Contents: Preparation for meditation; Asanas for meditation; Mudras and bandhas for pranayama, pratyahara, and meditation; Pranayama before meditation; Pratyahara preparatory to meditation; The practice of meditation; What is meditation: The four-fold existence of the self; Tanha: Unquenched thirst; The six-fold enemy; Yama: The five great vows; Niyama: The performance of five prescriptive duties; Vitalisation and withdrawal; The tripod of meditation; Equanimity: Contradictions dissolved; Universal love; A dedicated life is yoga; A yogi’s vision—all in one, one in all; The root of evil; A flame without flicker; Yoga for peace; A middle path in yoga; Psychosomatic and somatopsychic effects; Physiopathology of stress disorders; Meditation on psychophysiology and psychopathology; Meditation and psychoimmunology; Meditation on specific organs and functions; Meditation for the retardation of geriatric processes; Meditation for the promotion of mental and spiritual health


Contents: Concentration, Key to concentration, Power of concentration, Meditation, Aids to meditation, Superconscious vision, The groundwork of thought, Practical hints


Reports on Dr. Ramesh Manocha’s meditation research, which he has successfully used in treating migraine headaches, asthma, hot flashes, and occupational stress.


Abstract: We report extremely prominent heart rate oscillations associated with slow breathing during specific traditional forms of Chinese Chi and Kundalini Yoga.
meditation techniques in healthy young adults. We applied both spectral analysis and a novel analytic technique based on the Hilbert transform to quantify these heart rate dynamics. The amplitude of these oscillations during meditation was significantly greater than in the pre-meditation control state and also in three non-meditation control groups: i) elite athletes during sleep, ii) healthy young adults during metronomic breathing, and iii) healthy young adults during spontaneous nocturnal breathing. This finding, along with the marked variability of the beat-to-beat heart rate dynamics during such profound meditative states, challenges the notion of meditation as only an autonomically quiescent state.

**Pensa, Corrado.** La meditazione: Interpretazioni, significati, valori. *Uomo e Societa nelle Religioni Asiatiche*, 1973. [In Italian.]


Abstract: Transient, focal, epileptic-like electrical changes in the temporal lobe, without convulsions, have been hypothesized to be primary correlates of religious experiences. Given these properties, direct measurement of these phenomena within the laboratory should be rare. However, two illustrated instances have been recorded. The first case involved the occurrence of a delta-wave-dominant electrical seizure for about 10 sec. from the temporal lobe only of a Transcendental Meditation teacher during a peak experience within a routine TM episode. The second case involved the occurrence of spikes within the temporal lobe only during protracted intermittent episodes of glossolalia by a member of a pentecostal sect. Neither subject had any psychiatric history. These observations are commensurate with the hypothesis that religious experiences are natural correlates of temporal lobe transients that can be detected by routine EEG measures.

**Pierce, Margaret and Martin.** Move into meditation with yoga: Simple yoga poses can relax your body, quiet your mind, and regulate your breath in preparation for sitting meditation. *Yoga Journal*, Aug 1996, pp. 69-75.


Abstract: 20 hypertensive patients participating in a professionally supervised programme of transcendental meditation showed no significant change in blood-pressure after a 6-
month study. Although there were small reductions in systolic blood-pressure and in pulse-rate early in the trial, these changes had disappeared by 6 months. At no time did the mean diastolic pressure fall significantly. Plasma-renin activity did not change during the study. It is concluded that while the general feeling of well-being experienced by most patients may provide a useful adjunct to conventional treatments, it is unlikely that transcendental meditation contributes directly towards the lowering of blood-pressure.


“This workshop will focus on long held, passive Yin postures that prepare the body for sitting meditation. Reminders of the ‘4 Foundations of Mindfulness’ will be shared during the practice. A 45-minute guided as well as silent meditation will follow.”


Includes “a Yin-style practice of long held passive poses.. A strong asana flow series, pranayama, and meditation.”


Episode 1 – Hatha Yoga: *Return to Wholeness* (features Donna Farhi)
Episode 2 – Metta Meditation: *Opening the Heart* (features Sylvia Boorstein)
Episode 3 – Healing Qigong: *Balancing Heaven and Earth* (features Master Li Jun Feng)
Episode 4 – Zen Buddhism: *Chop Wood, Carry Water* (features Norman Fischer and Michelle Meyrink)
Episode 5 – Miksang Photography: *Cultivating the Good Eye* (features Michael Wood)
Episode 6 – Christian Meditation: *The Light Within* (features Father Laurence Freeman)

**Rai, Lajpat.** *Meditation: Techniques and Their Scientific Evaluation*. Haryana, India: Anubhav Rai Publications. Email: Irai@ndf.vsnl.net.in.


Contents: Normal consciousness; Altered states of consciousness; Meditation; The Christian mystical tradition; Jewish mysticism; The Hindu and Buddhist traditions; Psychophysiology of the meditative state; Mediation and personality change; Meditation as deautomatization


_________. [Medical effects of Transcendental Meditation.] *Tidsskrift for den Norske laegeforening*, 20 Jan 2002, 122(2):220. PMID: 11873589. [In Norwegian.]


“A type of meditation called mindfulness-based stress reduction may improve symptoms and quality of life, as well as reduce stress, in patients with a wide variety of chronic illnesses, the results of a new study indicate.
“A tactic called mindfulness-based stress reduction teaches patients to ‘try to stay as present as possible with their experience,’ according to the study’s lead author, Dr. Diane K. Reibel, of the Center for Integrative Medicine at Thomas Jefferson University in Philadelphia, Pennsylvania.”


Rockers, Daniel M. The successful application of meditative principles to treatment refractory pain conditions. Pain Medicine, Jun 2002, 3(2):188.

Abstract: The potential psychological mechanisms mediating physically expressed pain are investigated through separate yet related means in case studies. In case 1, pt BI suffered from RSD/CRPS I and was treated with GSR and thermal, while in case 2 TT experienced a number of difficult conditions including biofeedback sciatica, acid reflux, breast soreness, anxiety and headaches and was treated with hypnotically induced meditation and self-induced meditation. At three months into treatment, BI had reduced pain ratings by 40%, increased sleep time by a factor of two. At four months into treatment, TT had decreased pain ratings by 40% and decreased pain medications intake by 50%.

Although the treatment modalities themselves appear disparate, they both involve the common underlying theme of regulating attentional thought processes from an intentional and conscious perspective. As applied to pain states this is useful because each thought, feeling, idea or perception involves some type of physical or physiological response. Uncontrolled and unregulated thought process of the mind can create (and through habituation maintain) offensive physiological conditions. Extant examples include angina, hypertension, and tension headache. Specific methodology applied to the above cases involved training in elements of Hinduist¹, Buddhist² and Taoist³ meditative principles with the goal being the increase in and volitional directing of attention. This involved quieting the thought processes of the mind and was accomplished in a variety of ways, including the utilization of external devices such as biofeedback instruments, through breathing exercises⁴, and examination of thought processes.


Abstract: Baer [same issue of Clinical Psychology] has provided a thoughtful conceptual and empirical review of mindfulness-based clinical interventions, emphasizing the need for further research. In this commentary we elaborate on some of the areas needing further study. The promising initial data suggest a need for basic experimental and treatment outcome research in order to determine active ingredients and mechanisms of action in mindfulness-based interventions. In addition, questions remain regarding the optimal mode of delivery of this treatment, as well as how to integrate the nonstriving aspect of mindfulness into clinical intervention.


Patients (N = 108) in a study of cocaine-specific coping skills training (CST), which was found to reduce cocaine use during a 3-month follow-up, were followed for an additional 9 months. CST involved coping skills training in the context of high-risk situations. Control treatment used meditation-relaxation. Both were added to comprehensive private substance abuse treatment. Patients in CST who relapsed had significantly fewer cocaine use days than did the control group during the first 6 months, then both conditions did equally well. Patients in CST also drank alcohol more frequently in the last 6 months than did contrast patients but did not differ in heavy drinking days. For cocaine use outcomes, no interaction of treatment was found with gender, education, route of administration, drug use severity, sociopathy, or depression. Implications include the need to investigate different lengths and combinations of treatment.


From the website: “*Yoga for Meditators* [provides] a series of gentle postures which help strengthen, stretch and, most importantly, relax the body . . . . as we slow down, we find the joy of simply being present.”


“This book was written to bridge the gap between the many existing theoretical works on mental concentration and meditation, and the general application of the mind’s powers to everyday life. [The author] teaches concentration by showing the use and results of it . . . After a careful explanation of the role of concentration in a spiritual search and some helpful advice on proper approach, the author introduces exercises in concentration. He offers material from both Western and Eastern sources, relating the achievements of early Christian saints and Indian yogis to their mastery of mental powers.”

Contents: Foreword and definitions, The method, The use of concentration, The role of concentration in a spiritual search, Who is qualified to study concentration?, Conditions for success, Advice to the student, Eastern methods of yoga (mind before heart), The Western tradition (heart before mind), Obstacles and aids, Inner attitude—the key to attainment, What is the mind?, Different aspects of consciousness, The psychology of success, Direct preparation for exercises, First series (elementary exercises), Second series, Third series (advanced exercises), Fourth series, Fifth series (final exercises), On the threshold of meditation, Resurrection into a new consciousness


Contents: Definition of meditation; The science of clichés; Some basic questions answered; Achievements made possible by regular meditation; Obstacles to meditation; Assistance on the path of meditation; Further questions explained; Different types of meditation; Subconsciousness or hyperconsciousness; The main difficulties for beginners; Exercises; The creation of clichés; Meditation in diagrams; Japa; An ethical group of meditations; Sankaracharya’s meditations; From the Maharshi’s wisdom; Exercises dealing with the mind; The Sermon on the Mount; Meditation about mastership; Meditation on God; Meditation on *The Imitation of Christ* by Thomas a Kempis; Axioms of truth and the Bhagavad-Gita; Mute meditation; Mute prayer;
Contemplation as a synthesis of both; Mystical powers in contemplation; The possibility of miracles


_________. Without limits: When we begin to practice meditation, we come to recognize the sense of limitation that has been imposed upon our lives. *Yoga Journal*, Mar/Apr 2002, pp. 151-154.


From the publisher: “Sri Swami Satchidananda gives a remarkably thorough overview of the various techniques of meditation in relatively few pages. The booklet describes the use of mantras, yantras, and specific breathing practices.”


Abstract: This thesis provides the contextual background, theoretical foundation, and procedural components of mantra meditation. This thesis also proposes the complementary use of mantra meditation in conventional psychotherapy practice. The paper is supported by the professional psychotherapy literature and relevant writings by renowned Indian authors and philosophers, and is interspersed with the author's own viewpoints and suggestions. The thesis begins with an introduction, providing a general overview of use of meditation in psychotherapy, and briefly outlines the facts and reasons for the lack of its wide acceptance in standard psychotherapy practice, despite positive research evidence. This introductory section is followed by chapters that include: (i) the development of mantra meditation from the ancient Indian context to the contemporary one; (ii) a detailed outline of the theoretical foundation of Mantra Meditation, rooted in the ancient Indian medicine system called “Ayurveda”; (iii) the process of Mantra Meditation; (iv) a comparison of Transcendental Meditation (TM), a contemporary form of mantra meditation with Mindfulness Meditation; (v) a comparison of mantra meditation with psychodynamic theories of psychotherapy; and (vi) guidelines for integrating mantra meditation in traditional psychodynamic psychotherapy with the help of a case example. The final chapter concludes with a discussion about the responsible use of mantra meditation in psychotherapy, and limitations of the thesis and its potential contributions to the field of psychotherapy.


From Eric Schiffman: “This was taped during a week-long Yoga and meditation retreat held at Feathered Pipe Ranch in the mountains of Montana.”


Abstract: Psychosocial stress contributes to high blood pressure and subsequent cardiovascular morbidity and mortality. Previous controlled studies have associated decreasing stress with the Transcendental Meditation (TM) program with lower blood
pressure. The objective of the present study was to evaluate, over the long term, all-cause and cause-specific mortality in older subjects who had high blood pressure and who participated in randomized controlled trials that included the TM program and other behavioral stress-decreasing interventions. Patient data were pooled from 2 published randomized controlled trials that compared TM, other behavioral interventions, and usual therapy for high blood pressure. There were 202 subjects, including 77 whites (mean age 81 years) and 125 African-American (mean age 66 years) men and women. In these studies, average baseline blood pressure was in the prehypertensive or stage 1 hypertension range. Follow-up of vital status and cause of death over a maximum of 18.8 years was determined from the National Death Index. Survival analysis was used to compare intervention groups on mortality rates after adjusting for study location. Mean follow-up was 7.6 ± 3.5 years. Compared with combined controls, the TM group showed a 23% decrease in the primary outcome of all-cause mortality after maximum follow-up (relative risk 0.77, p = 0.039). Secondary analyses showed a 30% decrease in the rate of cardiovascular mortality (relative risk 0.70, p = 0.045) and a 49% decrease in the rate of mortality due to cancer (relative risk 0.49, p = 0.16) in the TM group compared with combined controls. These results suggest that a specific stress-decreasing approach used in the prevention and control of high blood pressure, such as the TM program, may contribute to decreased mortality from all causes and cardiovascular disease in older subjects who have systemic hypertension.

Problems with this study as reported by Judy Foreman, “Does meditation offer any health benefits?” The Boston Globe, 3 May 2005: “The study, conducted by Dr. Robert H. Schneider, director of the Institute for Natural Medicine and Prevention at the Maharishi University of Management in Fairfield, Iowa, pooled data on 202 mildly hypertensive people from two previous, randomized, controlled studies published in 1989 and 1995. Those studies, said Schneider, showed that Transcendental Meditation, a form of meditation in which a person is given a ‘mantra’ by a teacher and trained to use the technique to quiet the mind, lowered blood pressure after three to four months if done for 20 minutes twice a day.

“In 2001, Schneider’s team looked at death records from the National Center for Health Statistics for the participants in these studies, who were interviewed an average of 7.6 years earlier. The researchers found the participants were more likely to be alive if they had practiced TM in the original studies. But—and it is a huge ‘but’—the samples were quite small and researchers had no way of knowing whether the meditators kept meditating after the initial studies.”


From a review by Bella Neparstek, Health Journeys: Eighteen subjects were long-term practitioners of the TM program (average 16.5 years). Twenty-three controls were not practicing a formal stress management technique. Venous blood samples were analyzed for lipid peroxides by the TBARS assay. A dietary questionnaire was also used to assess fat intake, red meat consumption, antioxidant vitamin supplementation, and smoking. Differences between groups and subgroups were analyzed by T-test, and correlations.

The study found significantly lower serum levels of lipid peroxides in the TM practitioners, as compared with the controls (-15%, p = .026). No significant differences were found between groups on smoking, fat intake, or vitamin supplementation. TM practitioners also had lower red meat consumption but matched subgroup analysis. Partial correlations did not confirm a relationship between red meat intake and lipid peroxide levels.

These preliminary findings suggest that lower serum lipid peroxide levels are associated with a reduction of psychosocial stress from using the Transcendental Meditation technique. [Oxidative stress and free radical activity are increased by psychosocial stress, and are known to contribute to the pathophysiology of atherosclerosis and other chronic diseases associated with aging.]

Prospective controlled trials are needed to confirm that this effect is because of TM practice rather than other lifestyle factors, such as diet.


**OBJECTIVE:** To assess the attitudes and practices of professionals in the field of physical medicine and rehabilitation (PM&R) regarding prayer and meditation. **DESIGN:** A national mail survey that included questions about the use of a number of complementary and alternative therapies. **PARTICIPANTS:** The survey was mailed to 7,479 physicians, nurses, physical therapists, and occupational therapists who specialize in PM&R, and 1221 (17%) returned completed surveys. **RESULTS:** Although the majority of respondents endorsed prayer as a legitimate health care practice, there was greater belief in the benefits of meditation. Older respondents were more likely to recommend meditation to their patients and more likely to meditate themselves. Gender differences that were observed in opinions and practices are better interpreted as differences in professional specialty. In general, nurses and occupational therapists responded more positively toward meditation and prayer than did physicians and physical therapists. Personal use of a technique was the strongest predictor of professional behaviors. Attitude was a stronger predictor of professional use or referral for prayer than meditation, but correlations between attitude and behavior were generally weak for both
techniques. Despite their acceptance of these techniques, the vast majority of rehabilitation professionals did not refer their patients for meditation or religious consultation. CONCLUSIONS: Although there were significant relationships among beliefs, and personal and professional behaviors regarding these techniques, a large part of the variance in professional behaviors was not accounted for by age, gender, opinion, or personal behavior, indicating that other influences exert a stronger effect on professional practice decisions.


**Shapiro, Debbie and Eddie.** The right posture [for meditation]. *Yoga & Health*, Dec 1999, pp. 16-17. (Provides several alternatives.)


Abstract: The current study was designed to test the efficacy of a meditation-based intervention, mindfulness-based stress reduction (MBSR), for women with stage II breast cancer. This prospective randomized study examined the effects of psychological and sleep functioning in the MBSR treatment group compared to a control group. The treatment consisted of a group format focusing on training participants in mindfulness meditation and its application to daily life. Participants in the control group recorded the stress management activities they chose to engage in each day. Results indicated that over time all participants’ psychological well-being improved regardless of experimental condition. The MBSR condition did not improve significantly more than the control condition. Within the MBSR group, however, those participants reporting greater mindfulness meditation practice improved on both sleep and psychological variables more than those who practiced less. Implications of the study findings are discussed and directions for future research are suggested.

“Meditation colours the mind with the dye of detachment (Vairagya) and makes it transparent.”


“Meditation has become mainstream in America, as a part of many health programs, as a method of relaxation, and for spiritual growth, and as a topic in college courses around the country. There are, of course, already many books on the subject of meditation. Some discuss practices within a given tradition in a serious way. Others discuss meditation in a general way, but these are often superficial and misleading, if not simply inaccurate. But to date there is no book that presents in a clear, comprehensive, and systematic way the mechanics, theories and effects of the various major meditation systems now practiced and discussed in America. The book sponsored by this grant should fill this gap. Its contents and structure should enable it to serve as a readily accessible, cross-traditional textbook for a wide variety of college courses (e.g., religion, psychology, philosophy, multicultural studies, etc.), and as an authoritative reference for scholars. In addition, the book should be of interest to the many people who practice various forms of meditation and would like to know something about procedures other than their own, as well as those who are simply curious about the topic. The Infinity Foundation is delighted to announce its support of this project.

“Each of the chapters will deal with a single tradition of meditation. In order to facilitate inter-traditional comparisons, each chapter will cover the following topics:

(1) historical background
(2) mechanics of the techniques
(3) basic experiences and states
(4) further results (psychological and/or behavioral effects, higher states, etc.)
(5) interpretations and implications

“The book will be edited by Dr. Jonathan Shear, who will also write an essay for inclusion within it.

“The authors and topics of the chapters are expected to include:
Robert Thurman and David Gray (Tibetan meditation traditions)
Georg Feuerstein (Sankhya/Yoga)
Jeffrey Schwartz (Theravada Vipasana)
Don Salmon (Sri Aurobindo)
Sri Daya Mata (Kriya Yoga/Yogananda)
Liang Shou Yu and Wu Wen-Ching (Taoism/Qigong)
Llewelyn Vaughn Lee (Sufism)
Basil Pennington (Centering Prayer)
Jonathan Shear (Transcendental Meditation)


“Newfound interest in meditation is sparked by the discovery of its physiological effects . . .”


“How to establish correct and comfortable meditative seating postures and ways to overcome common problems with sitting in meditation.”


Contents: Theory of Concentration, Practice of Concentration, Preliminaries for Meditation, Practice of Meditation, Kinds of Meditation, Physical Obstacles in Meditation, Mental Obstacles in Meditation, Higher Obstacles in Meditation, Experiences in Meditation


Society for Meditation and Meditation Research. URL: http://www.smmr.de/html/ICSM.html. Founded by Klaus Engel, Ph.D.: klausengel@yahoo.de.

OBJECTIVE: To compare the efficacy in runners of two relaxation techniques with regard to exercise reactivity and recovery after exercise. METHODS: Thirty one adult male runners were studied prospectively for six months in three groups practising either meditation (n = 11) or autogenic training (n = 11) or serving as controls (n = 10). Before and after the six months relaxation intervention, indicators of reactivity to exercise and metabolism after exercise (blood lactate concentration, heart rate (HR), and oxygen consumption (VO2)), were tested immediately after and 10 minutes after exercise. Resting HR was also assessed weekly at home during the trial. State anxiety was measured before and after the intervention. RESULTS: After the relaxation training, blood lactate concentration after exercise was significantly (p<0.01) decreased in the meditation group compared with the control group. No difference was observed in lactate responses between the autogenic training group and the control group. There were no significant differences among the groups with regard to HR, VO2, or levels of anxiety. CONCLUSION: Meditation training may reduce the lactate response to a standardised exercise bout.


On Asanas that lead to a sound meditation posture.


“Most of us recognize the importance of sitting postures, but unless we are well-practiced our legs resist the twisting and bending they require and we are uncomfortable. So let’s take a closer look at the problem and see if we can find some low-tech solutions.”

_________. Asanas for sitting longer and more comfortably. Fourth Annual Southwest Yoga Conference. Corrales, New Mexico, 8-11 Nov 2001, info@southwestyoga.com.


“If you want to know the core of life, why not give a few more minutes to the method that brings you there?”

Sparrowe, Linda. Sthira sukham asanam (seated posture should be steady and comfortable). Patanjali’s basic advice in the Yoga Sutra may sound simple, but many find sitting in meditation painful and difficult. This sequence of poses can help bring ease to your seated posture. Yoga Journal, Mar/Apr 2003, pp. 94-101, 177.


On Dr. Nirmala Kajaria, director of Brahma Kumaris Raja Yoga Meditation Centres in Australia, New Zealand and the Asia Pacific region, where free meditation and positive
thinking classes are provided as a community service. Dr. Kajaria has been combining meditation practices with medical treatments since the 1960s.

From the article:

“. . . in 1965, Dr. Nirmala opened her own clinic, which specialised in diseases common in Third World countries and discovered that many of her patients responded much better when their treatment was supplemented with meditation.

“The aim of my study was to help people. I could see that with medicine I could help people on a limited level to cure sickness for a short time only,’ she said.

‘‘After a while, the patients would come back with the same problem, medicine could help but the main cause of the disease was psychosomatic . . .’

“‘What was so special about the art of meditation, which drew this talented physician’s lifetime

“‘Meditation can help us understand tension and stress and how to manage it before it gets the better of us,’ she said.

“‘Meditation helps us to learn and control our thoughts in a positive way.

“‘People think that yoga means exercise and that meditation means to sit and shut your eyes and do nothing.

“‘In fact Raja Yoga meditation enables us to adjust out mental outlook so that the mind and body can retain their proper balance.

“‘It also facilitates the development of our talents and virtues for a constructive and creative way of life.’”

Spira, Jim. Hypnosis and meditation. 24 May 1998. Article available online: http://www.behavior.net/cgi-bin/nph-display.cgi?MessageID=76&Top=75&config=meditation&uid=nC1M8.user&new=0&adm=0.

____________. What about depersonalization/derealization [during meditation]? 11 Jun 1999. Article available online: http://www.behavior.net/cgi-bin/ls2.cgi?config=meditation&uid=nC1M8.user&new=0.

____________. Mediation in Psychotherapy online forum. URL: http://www.behavior.net/cgi-bin/ls2.cgi?config=meditation&uid=nC1M8.user&new=0.

“... Meditation involves learning to quiet the mind, ... and opening the heart to positive feelings. Mind and body are involved in achieving a peaceful state, as the body must be totally relaxed to slip into a meditative state.

“Electroencephalograms demonstrate the progressive slowing of brain waves as meditation deepens.

“Meditation produces many positive effects. It benefits all aspects of physical and emotional health.

“Deep relaxation, necessary to enter and remain in a meditative state, becomes even more pronounced as brain waves become slower and slower. Thus calmness and serenity, as well as decreased blood pressure and heart rate, are natural byproducts.

“The immune system is strengthened, and cures of end-stage cancer have been documented in research studies.

“Because meditation quiets the mind, it eases and often eliminates numerous emotional problems. A person who meditates daily is centered and calm, and life unfolds evenly with highs and lows viewed from a place of detachment. Exaggerated emotional reactions are relegated to the past, and no problem or situation is overwhelming.

“Because a meditator is focused in the moment, choices and actions are purposeful, not based on impulsive whims. Intuitive wisdom and self-confidence develop. Individuals gradually feel more in charge of themselves and their lives, and less victimized by circumstances, as meditation enhances inner growth.

“The practice of meditation is accomplished through consistency, which for most people is the most difficult aspect . . .”


“Scientists study it. Doctors recommend it. Millions of Americans—many of whom don’t even own crystals—practice it every day. Why? Because meditation works.”


Abstract: The EEGs of 13 experienced practitioners of transcendental meditation (TM) were recorded for 5 min preceding TM, during 20 min of TM and until 5 min after, as well as during closed-eyed wakefulness, drowsiness, sleep onset and sleep. Thirteen healthy volunteers matched for age served as control subjects. Computer period-amplitude analysis of F3-C3, T3-T5, P3-O1, F4-C4 and P4-O2 epochs of 50--100 sec duration resulted in a frequency and amplitude spectrum (0.5--28.6 c/sec), and the mean
frequency and the mean voltage of each EEG lead. The EEG frequency spectra constituted a continuum with increasing theta and delta activity and decreasing alpha activity as the participants tended to fall asleep. The frequency spectrum during TM corresponded to a spectrum situated between that of wakefulness and drowsiness and remained virtually unchanged during the 20 min of meditation. The EEG mean frequency of the TM group was about 1 c/sec slower than that of the control group. Intra- or interhemispheric differences between quantities of EEG activity remained stable during TM, nor did we observe any theta bursts. There was no consistent EEG pattern associated with a successful or unsuccessful meditation, nor did the EEGs of two meditators who stated they had felt drowsy during TM show a different pattern.


“An overview of Patanjali’s Classical Raja Yoga with practical advice on how to gain the experiences cited in the text that move from Yoga to the experience of the True Self. Contents include Asana samadhi, using pranayama to find peace, and specific meditation techniques for evolving Ayurvedic qualities into prana, tejas and ojas. The variety of experiences of Shakti Kundalini movements and spontaneous practices as signs of spiritual awakening.”


From the publisher: “In *Zen Computer*, Philip Toshio Sudo takes the age-old tradition of meditating on objects from everyday life and upgrades it for the cyberworker. For many people, what is more everyday than a computer? From boot to shutdown, Sudo goes inside the computer and out, utilizing every nuance of computer work as an occasion for meditation.”

Serum cortisol and total protein levels, blood pressure, heart rate, lung volume, and reaction time were studied in 52 males 20-25 years of age practicing Dhammakaya Buddhist meditation, and in 30 males of the same age group not practicing meditation. It was found that after meditation, serum cortisol levels were significantly reduced, serum total protein level significantly increased, and systolic pressure, diastolic pressure and pulse rate significantly reduced. Vital capacity, tidal volume and maximal voluntary ventilation were significantly lower after meditation than before. There were also significant decreases in reaction time after meditation practice. The percentage decrease in reaction time during meditation was 22%, while in subjects untrained in meditation, the percentage decrease was only 7%. Results from these studies indicate that practicing Dhammakaya Buddhist meditation produces biochemical and physiological changes and reduces the reaction time.


Abstract: In the West, the use of the methods of alternative medicine, including meditation, has been on the rise. In the US, Kabat-Zinn and associates have pioneered the extensive use of mindfulness meditation (MM) for the treatment of people facing pain and illness. Among the essentials of MM is the observation of bodily sensations, including pain. In Taiwan, despite the deep cultural roots of meditation, its therapeutic use has received little attention from institutionalized medicine. We report on the case of a man who was prone to developing severe headaches due to activities requiring extreme concentration. He learned to control his pain and discomfort through mindfulness meditation, although this practice in fact induced headaches initially. It is suggested that training in MM may be a medically superior and cost-effective alternative to pain medication for the control of headaches with no underlying organic causes in highly motivated patients.


Abstract: The number of cancer patients seeking complementary therapies to deal with their disease has increased steadily in recent decades. Complementary therapies can be helpful to cancer patients because they address some of the pervasive psychosocial difficulties associated with this disease. One mind-body technique is meditation. While programs using meditation have been developed for specific health populations, such as heart disease and addictions, an equivalent, well-established program for cancer patients
is lacking. This article reviews the literature and proposes a complementary meditation program designed specifically for use with cancer patients.


Abstract: Heart disease is the leading cause of death among Americans each year, yet the misperception still exists that cardiovascular disease is not a serious health problem for women. Evidence indicates that anxiety contributes to the development of heart disease. The primary purpose of this study was to assess the effectiveness of Kabat-Zinn’s mindfulness-based stress reduction program to reduce anxiety in women with heart disease. Anxiety, emotional control, coping styles, and health locus of control were compared in a treatment and control group of women with heart disease. Post-intervention analyses provide initial support for beneficial effects of this program.


Abstract: http://highwire.stanford.edu/cgi/medline/pmid;15649551

Abstract: Meditation is the attainment of a restful yet fully alert physical and mental state practiced by many as a self-regulatory approach to emotion management, but the psychophysiological properties and personality traits that characterize this meditative state have not been adequately studied. We quantitatively analyzed changes in psychophysiological parameters during Zen meditation in 20 normal adults, and evaluated the results in association with personality traits assessed by Cloninger’s Temperament and Character Inventory (TCI). During meditation, increases were observed in fast theta power and slow alpha power on EEG predominantly in the frontal area, whereas an increase in the normalized unit of high-frequency (nuHF) power (as a parasympathetic index) and decreases in the normalized unit of low-frequency (nuLF) power and LF/HF (as sympathetic indices) were observed through analyses of heart rate variability. We analyzed the possible correlations among these changes in terms of the percent change during meditation using the control condition as the baseline. The percent change in slow alpha EEG power in the frontal area, reflecting enhanced internalized attention, was negatively correlated with that in nuLF as well as in LF/HF and was positively correlated with the novelty seeking score (which has been suggested to be associated with dopaminergic activity). The percent change in fast theta power in the frontal area, reflecting enhanced mindfulness, was positively correlated with that in nuHF and also with the harm avoidance score (which has been suggested to be associated with serotonergic activity). These results suggest that internalized attention and mindfulness as two major core factors of behaviors of mind during meditation are characterized by different combinations of psychophysiological properties and personality traits.

Tan, C. M. How does a meditator deal with pain? Article available online: http://www.serve.com/cmtan/buddhism/pain.html.


Abstract: Evidence suggests mindfulness-based clinical interventions are effective. Accepting this, we caution against assuming that mindfulness can be applied as a generic technique across a range of disorders without formulating how the approach addresses the factors maintaining the disorder in question. Six specific issues are raised: mindfulness has been found to be unhelpful in some contexts; where mindfulness has been found to be effective, instructors have derived and shared with clients a clear problem formulation; there may be many dimensions of effectiveness underlying the apparent simplicity of mindfulness; mindfulness was developed within a particular “view” of emotional suffering that implies wider changes that go beyond meditation practice alone; professionals need to match the different components of mindfulness with the psychopathology being targeted; nonetheless, mindfulness may affect processes common to different pathologies.


Abstract: A controlled, quantitative investigation of the electroencephalogram (EEG) and transcendental meditation (TM) revealed that EEG changes during TM were rarely as pronounced or consistent as previous reports suggest. There was considerable variation between subjects, some displaying no EEG changes at all during TM compared with an equal period of non-meditation. Any changes that did occur in a particular individual were not necessarily repeated in a subsequent session. A comparison of mean EEG parameters of the experimental group revealed no consistent significant differences between meditation and non-meditation, although trends towards increased theta and decreased beta activity during meditation were apparent. The biggest differences in mean EEG parameters were between subject groups. In particular, the group of meditators exhibited significantly more theta activity (during both TM and non-meditation) than a randomly selected group of individuals that had never meditated or been hypnotized. The EEG characteristics of the group of meditators were similar to those of a group of subjects experienced in self-hypnosis. It is concluded that the most obvious EEG changes
during meditation are long-term. In people who regularly practise TM (or self-hypnosis), the EEG gradually (over weeks or months) tends to “slow down.” Such a “slowed down” EEG is apparent during both normal waking conditions and altered states of consciousness in these individuals.


Abstract: Middle latency auditory evoked potentials were examined in 7 proficient subjects during the practice of meditation on the syllable 'OM', to determine whether these potentials would differ significantly from those recorded during the baseline state without practicing meditation. Similar records were also obtained in 7 'naive' subjects, matched for age, before and during a control period which involved sitting with eyes closed, and with no special instructions for focusing their thoughts. There was considerable inter-subject variability in the different components. However, during meditation there was a small but significant reduction in the peak latency of the Nb wave (the maximum negativity occurring between 35 and 65 msec). This reduction was observed consistently during the 3 repeat sessions of each subject, while the 'naive' subjects did not show this change. These results suggest that the inter-subject variability of middle latency auditory evoked potentials precludes using them as the method of choice for assessing the effects of meditation. The small but consistent decrease in the Nb wave peak latency, indicates that the middle latency auditory evoked potentials do change with meditation. However, the variability of the potentials may mask subtle changes.


Abstract: Middle latency auditory evoked potentials were recorded in 18 male volunteers with ages between 25 and 45 years, 9 of whom had more than 10 years of experience in "Om" meditation (senior subjects), whereas the other 9 had no meditation experience (naive subjects). Both groups were studied in two types of sessions. (1) Before, during, and after 20 minutes of mentally repeating "one" (control session), and (2) a similar session, though with 20 minutes of mentally chanting "Om" (meditation session). The senior subjects showed a statistically significant (paired t-test) increase in the peak amplitude of Na wave (the maximum negative peak between 14 and 18 ms) during meditation, while the same subjects showed a statistically significant reduction in the Na wave peak amplitude during control sessions. In contrast, the naive subjects had a
significant decrease in the Na wave peak amplitude during meditation sessions and a nonsignificant trend of reduction during control sessions, as well. This difference between senior and naive subjects was significant (two-way ANOVA). There were no significant changes in short latency wave V or Pa wave (the positive peak between the Na wave and 35 ms). The changes in the Na wave suggest that both mediation on a meaningful symbol, and mental repetition of a neutral word cause neural changes at the same level (possibly diencephalic). However, the change could be in opposite directions, and this difference could be correlated with differences in the duration of experience in meditation between senior and naive subjects.


A translation of the Satipatthana Sutta of the Majjhima Nikaya; its Commentary, the Satipatthana Sutta Vannana of the Papañcasudani of Buddhaghosa Thera; and excerpts from the Linathapakasana Tika, Marginal Notes, of Dhammapala Thera on the Commentary.


From the publisher: “. . . a collection of fifteen articles and transcriptions of talks by Tulku Thondup. The first part of the book provides an introduction to the Buddhist path. . . The second part of the book is a discussion of meditation practice . . .”

Tigunait, Pandit Rajmani. Answers the question: “Is it true that meditation is both cleansing and nourishing?” *Yoga International*, Feb/Mar 2003, pp. 32-34.

__________. Answers the questions: “I hear so much talk about meditation from so many different perspectives that I’ve become confused. Can you explain what meditation is?” “When I meditate on my mantra, thoughts still come into my mind. Does this mean that I’m not doing my practice correctly?” “Even when my mind is engaged with my mantra, I’m still aware of other thoughts. Most of these intruding thoughts that I experience are trivial, but some of them are significant and are powerful enough to force me to pay attention to them. What can I do?” “Are there any other ways of dealing with deeper issues?” “I’ve heard that the gayatri mantra is helpful in clearing the mind of negative thinking and resolving deeper issues. Why is that, and how can I use it as a means for overcoming mental pollution?” *Yoga International*, Apr/May 2003, pp. 31-34.


Undergraduate volunteers were divided into Control (n= 18) and Novice Meditators (n = 8). Residents of an American Zen monastery who volunteered as subjects, having 1 year or more experience in meditation, formed a Longer-term Meditation group. All subjects were tested over five trials on the Poggendorff and Müller-Lyer illusions and completed the Taylor Manifest Anxiety Scale and the Beck Depression Inventory. Significant mean differences were found only for algebraic errors on the Poggendorff illusion, and significant decrement in illusion was noted for all subjects. A significant interaction was also found as the Longer-term Meditators showed less initial illusion and less dramatic decrement over five trials than the other groups. Finally, Longer-term Meditators exhibited significantly less anxiety and depression than the other two groups.


Abstract: To determine whether a period of meditation could influence melatonin levels, two groups of meditators were tested in a repeated measures design for changes in plasma melatonin levels at midnight. Experienced meditators practising either TM-Sidhi or another internationally well known form of yoga showed significantly higher plasma melatonin levels in the period immediately following meditation compared with the same period at the same time on a control night. It is concluded that meditation, at least in the two forms studied here, can affect plasma melatonin levels. It remains to be determined whether this is achieved through decreased hepatic metabolism of the hormone or via a direct effect on pineal physiology. Either way, facilitation of higher physiological melatonin levels at appropriate times of day might be one avenue through which the claimed health promoting effects of meditation occur.


Abstract: Orthogonal contrasts of Adjective Checklist pretest-posttest change scores obtained from adolescents who attended three-day Buddhist or Roman Catholic retreats (n = 204) and no treatment control participants (n = 102) indicated those who attended had higher change scores and greater change occurred among those attending the
Buddhist meditation retreat.


Abstract: This study compared EEG and autonomic patterns during transcending to “other” experiences during Transcendental Meditation (TM) practice. To correlate specific meditation experiences with physiological measures, the experimenter rang a bell three times during the TM session. Subjects categorized their experiences around each bell ring. Transcending, in comparison to “other” experiences during TM practice, was marked by: (1) significantly lower breath rates; (2) higher respiratory sinus arrhythmia amplitudes; (3) higher EEG alpha amplitude; and (4) higher alpha coherence. In addition, skin conductance responses to the experimenter-initiated bell rings were larger during transcending. These findings suggest that monitoring patterns of physiological variables may index dynamically changing inner experiences during meditation practice. This could allow a more precise investigation into the nature of meditation experiences and a more accurate comparison of meditation states with other eyes-closed conditions.


__________, and A. Arenander. Cross-sectional and longitudinal investigation of effects of transcendental meditation practice on interhemispheric alpha asymmetry and broadband coherence. *Journal of Psychophysiology*.


Abstract: This study tested the prediction that reading Vedic Sanskrit texts, without knowledge of their meaning, produces a distinct physiological state. We measured EEG, breath rate, heart rate, and skin conductance during: (1) 15-min Transcendental Meditation (TM) practice; (2) 15-min reading verses of the Bhagavad Gita in Sanskrit; and (3) 15-min reading the same verses translated in German, Spanish, or French. The two reading conditions were randomly counterbalanced, and subjects filled out experience forms between each block to reduce carryover effects. Skin conductance
levels significantly decreased during both reading Sanskrit and TM practice, and increased slightly during reading a modern language. Alpha power and coherence were significantly higher when reading Sanskrit and during TM practice, compared to reading modern languages. Similar physiological patterns when reading Sanskrit and during practice of the TM technique suggests that the state gained during TM practice may be integrated with active mental processes by reading Sanskrit.


Abstract: This paper explores subjective reports and physiological correlates of the experience of “consciousness itself”—self awareness isolated from the processes and objects of experience during Transcendental Meditation practice. Subjectively, this state is characterized by the absence of the very framework (time, space, and body sense) and content (qualities of inner and outer perception) that define waking experiences. Physiologically, this state is distinguished by the presence of apneustic breathing, autonomic orienting at the onset of breath changes, and increases in the frequency of peak EEG power. A model, called the junction point model, is presented that integrates pure consciousness with waking, dreaming, or sleeping. It could provide a structure to generate a coherent program of research to test the full range of consciousness and so enable us to understand what it means to be fully human.


Abstract: Long-term meditating subjects report that transcendental experiences (TE), which first occurred during their Transcendental Meditation (TM) practice, now subjectively co-exist with waking and sleeping states. To investigate neurophysiological correlates of this integrated state, we recorded EEG in these subjects and in two comparison groups during simple and choice contingent negative variation (CNV) tasks. In individuals reporting the integration of the transcendent with waking and sleeping, CNV was higher in simple but lower in choice trials, and 6-12 Hz EEG amplitude and broadband frontal EEG coherence were higher during choice trials. Increased EEG amplitude and coherence, characteristic of TM practice, appeared to become a stable EEG trait during CNV tasks in these subjects. These significant EEG differences may underlie the inverse patterns in CNV amplitude seen between groups. An 'Integration Scale,' constructed from these cortical measures, may characterize the transformation in brain dynamics corresponding to increasing integration of the transcendent with waking and sleeping.

___________, J. J. Tecci, and J. Guttman. Cortical plasticity, contingent negative variation, and transcendent experiences during practice of the Transcendental Meditation

Abstract: This study investigated effects of transcendent experiences on contingent negative variation (CNV) amplitude, CNV rebound, and distraction effects. Three groups of age-matched subjects with few (<1 per year), more frequent (10-20 per year), or daily self-reported transcendent experiences received 31 simple RT trials (flash (S(1))/tone (S(2))/button press) followed by 31 divided-attention trials - randomly intermixed trials with or without a three-letter memory task in the S(1)-S(2) interval. Late CNV amplitudes in the simple trials were smallest in the group with fewest, and largest in the group with most frequent transcendent experiences. Conversely, CNV distraction effects were largest in the group with fewest and smallest in the group with most frequent transcendent experiences (the second group’s values were in the middle in each case). These data suggest cumulative effects of transcendent experiences on cortical preparatory response (heightened late CNV amplitude in simple trials) and executive functioning (diminished distraction effects in letter trials).


Abstract: In two experiments, we investigated physiological correlates of Transcendental Consciousness during Transcendental Meditation sessions. In the first, experimenter-initiated bells, based on observed physiological patterns, marked three phases during a Transcendental meditation session in 16 individuals. Interrater reliability between participant and experimenter classification of experiences at each bell was quite good. During phases including Transcendental Consciousness experiences, skin conductance responses and heart rate deceleration occurred at the onset of respiratory suspensions or reductions in breath volume. In the second experiment, this autonomic pattern was compared with that during forced breath holding. Phasic autonomic activity was significantly higher at respiratory suspension onset than at breath holding onset. These easily measured markers could help focus research on the existence and characteristics of Transcendental Consciousness.


Abstract: In this single-blind within-subject study, autonomic and EEG variables were compared during 10-min, order-balanced eyes-closed rest and Transcendental Meditation (TM) sessions. TM sessions were distinguished by (1) lower breath rates, (2) lower skin conductance levels, (3) higher respiratory sinus arrhythmia levels, and (4) higher alpha anterior-posterior and frontal EEG coherence. Alpha power was not significantly different between conditions. These results were seen in the first minute and were maintained throughout the 10-min sessions. TM practice appears to (1) lead to a state fundamentally different than eyes-closed rest; (2) result in a cascade of events in the central and autonomic nervous systems, leading to a rapid change in state (within a
minute) that was maintained throughout the TM session; and (3) be best distinguished from other conditions through autonomic and EEG alpha coherence patterns rather than alpha power. Two neural networks that may mediate these effects are suggested. The rapid shift in physiological functioning within the first minute might be mediated by a “neural switch” in prefrontal areas inhibiting activity in specific and nonspecific thalamocortical circuits. The resulting “restfully alert” state might be sustained by a basal ganglia-corticothalamic threshold regulation mechanism automatically maintaining lower levels of cortical excitability. Copyright 1999 Academic Press.


“Chögyam Trungpa Rinpoche shows that meditation extends beyond the formal practice of sitting to build the foundation for compassion, awareness, and creativity in all aspects of life. He explores the six activities associated with meditation in action—generosity, discipline, patience, energy, clarity, and wisdom—revealing that through simple, direct experience, one can attain real wisdom: the ability to see clearly into situations and deal with them skillfully, without the self-consciousness connected with ego.”


“[a] reference [work] for any practicing nurse or care-giver interested in exploring alternative methods of healing. Guidelines for the use of meditation in everyday practice offer these individuals exploration into treatment of the multidimensional nature of their patient’s illness and empower the patient’s themselves to use their mind as a healing agent.”

Contents: INTRODUCTION: Purpose; Definition of Meditation as a Nursing Therapy; Paradigm of Illness and Cure; Paradigm of Wellness and Care - The Health Promotion Model; REVIEW OF STRESS AND RELAXATION RESPONSE: Physical Responses - Endocrine, Neurological, Cardio-Pulmonary; Stress Linked Diseases; MEDITATION: Purpose; Effects; Techniques; ADMINISTERING THE THERAPY - TEACHING PATIENTS: Target Nursing Diagnosis in Primary, Secondary, and Tertiary Settings; Teaching Children; Teaching Adolescents; Teaching Adults; MODIFYING TEACHING TECHNIQUES: Teaching the Developmentally Delayed or Mentally Retarded; Teaching the Cognitively Impaired Adult; Teaching Nurses and Other Professional Care-Givers; Teaching Non-Professional Care-Givers; APPENDIX: Glossary; Sample Patient Education Materials; Additional Reading; Other Resources


Abstract: The author, whose spiritual practice combines Christianity and Zen mediation, explains how meditation and Buddhist perspectives affect her work.

Vajradhatu. The psychology of meditation. Excerpted from Garuda. Article available online: http://www.dcn.davis.ca.us/~hmchenry/psch.htm.


Abstract: BACKGROUND: Various physiologic and biochemical shifts can follow meditation. Meditation has been implicated in impacting free radical activity. Ultraweak photon emission (UPE, biophoton emission) is a constituent of the metabolic processes in a living system. Spectral analysis showed the characteristics of radical reactions.

OBJECTIVES: Recording and analysing photon emission in 5 subjects before, during and after meditation. METHODS: UPE in 5 subjects who meditated in sitting or supine positions was recorded in a darkroom utilising a photomultiplier designed for manipulation in three directions. RESULTS: Data indicated that UPE changes after meditation. In 1 subject with high pre-meditation values, UPE decreased during meditation and remained low in the postmeditation phase. In the other subjects, only a slight decrease in photon emission was found, but commonly a decrease was observed in the kurtosis and skewness values of the photon count distribution. A second set of data on photon emission from the hands before and after meditation was collected from 2 subjects. These data were characterised by the Fano factor, $F(T)$, i.e. variance over mean of the number of photoelectrons observed within observation time $T$. All data were compared to surrogate data sets which were constructed by random shuffling of the data sets. In the pre-meditation period, $F(T)$ increased with observation time, significantly at time windows $>6$ s. No such effect was found after meditation, when $F(T)$ was in the range of the surrogate data set. CONCLUSIONS: The data support the hypothesis that human photon emission can be influenced by meditation. Data from time series recordings suggest that this non-invasive tool for monitoring radical reactions during meditation is useful to characterise the effect of meditation. Fano factor analysis demonstrated that the time series before meditation do not represent a simple Poisson process. Instead, UPE has characteristics of a fractal process, showing long-range correlations. The effect of meditation waive out this coherence phenomenon, suggesting a weaker and less ordered structure of UPE. In general, meditation seems to influence the complex interactions of oxidative and anti-oxidative reactions which regulate photon emission. The reason for the statistical changes between pre- and post-meditation measurements remains unclear and demands further examination.


“In Philadelphia, a researcher discovers areas of the brain that are activated during meditation. At two other universities in San Diego and North Carolina, doctors study how epilepsy and certain hallucinogenic drugs can produce religious epiphanies. And in Canada, a neuroscientist fits people with magnetized helmets that produce ‘spiritual’ experiences for the secular.

“The work is part of a broad new effort by scientists around the world to better understand religious experiences, measure them, and even reproduce them. Using powerful brain imaging technology, researchers are exploring what mystics call nirvana,
and what Christians describe as a state of grace. Scientists are asking whether spirituality can be explained in terms of neural networks, neurotransmitters and brain chemistry. “What creates that transcendental feeling of being one with the universe? It could be the decreased activity in the brain’s parietal lobe, which helps regulate the sense of self and physical orientation, research suggests. How does religion prompt divine feelings of love and compassion? Possibly because of changes in the frontal lobe, caused by heightened concentration during meditation. Why do many people have a profound sense that religion has changed their lives? Perhaps because spiritual practices activate the temporal lobe, which weights experiences with personal significance . . .”


Abstract: This paper is based on the outcomes of a 6-month study in a multicultural inner-city primary school and involved twenty-four pupils representing seventeen nationalities. The object of the study was to explore how imagination and concentration might promote language awareness and cultural pluralism. Among other techniques, the children used meditation as a way of exploring themselves and others. The study suggested that the children were open to new ways of learning, imagination being for them a meaningful medium for making sense of their world. The results supported the idea that for these children meditation could be an instrument of self-knowledge and knowledge of others.


An introduction to the classical eight-fold approach to meditation.


Concentration and meditation; Meditation as a process of observation; The role of the brain in meditation; Resolving conflict through meditation

**Vipassana Meditation Online Course.** URL: http://www.vipassana.com/course

Established in 1997, this course “is ideally suited to those who wish to learn to meditate but are without access to a local meditation teacher or group. The course presents a balanced approach to Buddhist Meditation practice as found in the Theravada tradition. This ‘doctrine of the elders’ is rooted in the Buddha’s teachings as recorded in the earliest
Buddhist texts, and is the form of Buddhism nowadays most often found in Thailand, Sri Lanka, and Myanmar.”

“[The] 90 day course includes guidance on the traditional practices of Mindfulness of Breathing (anapanasati), the Sublime Abodes (loving-kindness, compassion, appreciative joy, and equanimity) and Vipassana (insight) meditation. We look at the difficulties that are often encountered by meditators and at effective strategies for overcoming them. Careful attention is also given to the ethical framework that is necessary for spiritual development to occur. The courses are intensely practical and the emphasis is on enabling participants to develop a fulfilling and sustainable approach to meditation that remains consistent with the Buddha’s teachings.”


**Vivekananda, Rishi.** The many benefits of meditation. *Yoga (Sivananda Math),* Feb 2005, pp. 29-38.

Includes a discussion of the benefits based on the koshas.


Abstract: The goal of this study was to assess the impact of two psychosocial interventions, a meditation group and a supportive therapy group, on positive coping in cancer patients. Participants were recruited from a large cancer specialty hospital in NYC. All patients completed the Life Orientation Test, Revised (LOT-R), measuring optimism, and a coping skills inventory (COPE), and provided qualitative data describing their intervention experience. Positive and negative coping indices were aggregated from the COPE subscales. Positive coping included acceptance plus positive refraining and negative coping included denial plus behavioral disengagement. The interaction of optimism and group participation was evaluated to determine if group participation moderated coping choices. Both interventions were led by two healthcare professionals trained in the specific treatment interventions. Meditation group facilitators had prior personal experience with the use of meditation. The interventions were conducted two hours each week for 7 weeks. The meditation group used a Western form of meditation. The supportive therapy group used a Rogerian orientation. Of the twenty-six (26) patients, heterogeneous with respect to cancer type and stage, who completed the intervention, 15 were randomized to the meditation group and 11 to the supportive therapy group. Meditation group participant scores in optimism and positive coping increased and negative coping decreased after the intervention. Scores for the supportive
therapy group participants did not change. Although this study failed to confirm the existence of a moderation effect, a significant main effect for group participation emerged. Qualitative data is presented that supports these findings. These results are consistent with current theory that meditation groups are effective because they rely on the individual's own resources to define their optimal coping strategies. This leads to a more satisfying way of life. Future studies are necessary to confirm these results in a larger sample and different populations. Results could lead to putting interventions in place to support the chronically and terminally ill patients and their caregivers. The effectiveness of meditation groups to enhance positive coping in cancer patients has important and broad implications for research and practice.


Abstract: In this study, respiratory functions, cardiovascular parameters and lipid profile of those practicing Raja Yoga meditation (short and long term meditators) were compared with those of nonmeditators. Vital capacity, tidal volume and breath holding were significantly higher in short and long term meditators than nonmeditators. Long term meditators has significantly higher vital capacity and expiratory pressure than short and long term meditators than nonmeditators. Long term meditators had significantly higher vital capacity and expiratory pressure than short term meditators. Diastolic blood pressure was significantly lower in both short and long term meditators as compared to nonmeditators. Heart rate was significantly lower in long term meditators than in short term meditators and nonmeditators. Lipid profile showed a significant lowering of serum cholesterol in short and long term meditators as compared to nonmeditators. Lipid profile of short and long term meditators was better than the profile of nonmeditators inspite of similar physical activity. This shows the Raja Yoga meditation provides significant improvements in respiratory functions, cardiovascular parameters and lipid profile.


Abstract: This study compared secular and spiritual forms of meditation to assess the benefits of a spiritual intervention. Participants were taught a meditation or relaxation technique to practice for 20 min a day for two weeks. After two weeks, participants returned to the lab, practiced their technique for 20 min, and placed their hand in a cold-water bath of 2 degrees C for as long as they could endure it. The length of time that individuals kept their hand in the water bath was measured. Pain, anxiety, mood, and the spiritual health were assessed following the two week intervention. Significant interactions occurred (time×group); the Spiritual Meditation group had greater decreases in anxiety and more positive mood, spiritual health, and spiritual experiences than the other two groups. They also tolerated pain almost twice as long as the other two groups.


On Buddhist meditation practices.


Findings: Improved cardiovascular health: lower systolic blood pressure compared to norms for age. Effect more pronounced in long-term meditators.


Walters, J. Donald (Kriyananda). A Course in Meditation 2-video set. Nevada City, Calif.: Crystal Clarity Publishers. 223 minutes.


__________. Secrets of Meditation. Nevada City, Calif.: Crystal Clarity Publishers.


Abstract: Unlike younger women, the risk of cardiovascular disease in older women matches or exceeds that of men. Excessive cortisol may play a role in this increased risk. Here we explore the possibility that the Transcendental Meditation (TM) program may reduce the cortisol response to a metabolic stressor as a way of reducing disease risk in older women. Data from 16 women who were long-term practitioners of transcendental meditation (mean = 23 y) were compared with data from 14 control women matched for age (mean = 75 y, range = 65-92 y). Data on demographics, disease symptoms, and psychological variables were collected, and cortisol response to a metabolic stressor (75 g of glucose, orally) was examined in saliva and urine. Pre-glucose levels of salivary cortisol were identical for the two groups. Post-glucose cortisol rose faster in the controls and was significantly higher than that in the TM women (P < 1.3 × 10–4). Urinary excretion of cortisol during this period was 3 times higher in controls than in the TM women (2.4 ± 0.17 and 0.83 ± 0.10 µg/h, respectively; P = 2 x 10–4). In addition, the number of months practicing transcendental meditation was inversely correlated with CVD risk factors. Lower cortisol response to metabolic challenge may reflect improved endocrine regulation relevant to the disease-preventing effects of transcendental meditation in older women.


From the publisher: “In the shamanic worldview of Tibetan Bön, the five elements of earth, water, fire, air, and space are accessed through the raw powers of nature and through non-physical beings associated with the natural world. In the Tibetan tantric view, the elements are recognized as five kinds of energy in the body and are balanced with yogic movements, breathing exercises, and visualizations. In the highest teachings, Dzogchen, the elements are understood to be the radiance of being and are accessed through pure awareness. *Healing with Form, Energy and Light* offers the reader healing meditations and yogic practices on each of these levels.”


“Psychotherapy can be a powerful complement to spiritual practice, supporting our inspiration to develop awareness and compassion.”


Abstract: In this commentary I discuss the integration of mindful procedures in cognitive therapy of generalized anxiety disorder (GAD) and attempt to answer questions concerning the effects of mindfulness on information processing and on mechanisms purported to maintain GAD in the metacognitive model of this disorder. Different techniques that promote mindfulness can be identified, including mindfulness meditation and attention training. These techniques are intended to disrupt repetitive styles of dysfunctional thinking. I argue that the effect of mindfulness strategies on information processing in emotional disorder can be conceptualized in metacognitive terms as (a) activating a metacognitive ode of processing; (b) disconnecting the influence of maladaptive beliefs on processing; (c) strengthening flexible responding to threat; and (d) strengthening metacognitive plans for controlling cognition. Although mindfulness meditation may have general treatment applications, the metacognitive model of GAD suggests caution in using this treatment in GAD. It is unclear which dimension of worry should be targeted, and mindfulness meditation does not contain information that can lead to unambiguous disconfirmation of erroneous beliefs about worry.


PURPOSE: To determine if participation in a Wellness-Based Mindfulness Stress Reduction intervention decreases the effect of daily hassles, psychological distress, and medical symptoms. SUBJECTS: A total of 103 adults, with 59 in the intervention group and 44 in the control group. Eighty-five percent of subjects completed the intervention. Fifty-nine percent and 61% of the intervention and control subjects completed the study, respectively. INTERVENTION: The intervention consisted of an 8-week group stress reduction program in which subjects learned, practiced, and applied “mindfulness meditation” to daily life situations. The control group received education materials and were encouraged to use community resources for stress management. MEASURES: The Daily Stress Inventory assessed the effect of daily hassles, the Revised Hokins Symptom Checklist measured psychological distress, the Medical Symptom Checklist measured number of medication symptoms, and a Follow-up Questionnaire measured program adherence. RESULTS: Intervention subjects reported significant decreases from baseline in effect of daily hassles (24%), psychological distress (44%), and medical symptoms (46%) that were maintained at the 3-month follow-up compared to control subjects (repeated measures analysis of variance [ANOVA]; p < .05).


Contents: Success in life, The magic box, Aids to concentration, Chains of gold, Concentration in daily life, Control of the body and senses, The removal of intruding thoughts, Gymnastics of concentration, What meditation is, Methods of meditation, Mantric and symbolic meditation, Obstacles to meditation, Contemplation, Conclusion


Abstract: The scientific research that has investigated the physiological changes associated with meditation as it is practiced by adherents of Indian Yoga, Transcendental Meditation, and Zen Buddhism has not yielded a thoroughly consistent, easily replicable pattern of responses. The majority of studies show meditation to be a wakeful state accompanied by a lowering of cortical and autonomic arousal. The investigations of Zen and Transcendental Meditation have thus far produced the most consistent findings. Additional research into the mechanisms underlying the phenomena of meditation will require a shifting from old to new methodological perspectives that allow for adequate experimental control and the testing of theoretically relevant hypotheses.


Abstract: Although meditation has been employed successfully as a treatment for various stress-related disorders, there is still little evidence clarifying just which aspects of meditation training are responsible for these therapeutic effects. This experiment sought to test the hypothesis that creating two opposite expectations about an initial meditation experience would result in differing physiological and phenomenological responses, even though the same technique was practiced by all subjects. The results of the experiment failed to support this hypothesis.


Yee, Rodney. *Yoga Journal’s Yoga Practice for Meditation* video. See the interview with Rodney Yee regarding this video at:

From the interview: “In *Yoga Journal’s Yoga Practice for Meditation* I guide the viewer through five sessions to support their meditation practice. Each one helps with the challenges commonly encountered every day: bodily tension, improper posture and restricted breathing. And like *Yoga Journal’s Yoga Practice for Energy*, this program is inspired by nature. Filmed at Yosemite National Park, each session represents symbolic elements that we find in nature: Mountain, Garden, Tree, Wind and Sky.”


Abstract: Stress and pain mechanisms are complex and share many central nervous system pathways. Both are critical issues for patients with rheumatoid arthritis and other connective tissue diseases. The link between stress and neuroendocrine function suggests that alternative therapies focusing on improved psychologic and metabolic function could significantly change patients’ pain outcomes. Programs using alternative therapies such as tai chi and meditation in combination with traditional medications appear to be beneficial for patients with arthritis. These individuals appear to live better lives and may have better long-term outcomes.


Abstract: Meditation, a wakeful hypometabolic state of parasympathetic dominance, is compared with other hypometabolic conditions, such as sleep, hypnosis, and the torpor of hibernation. We conclude that there are many analogies between the physiology of long-term meditators and hibernators across the phylogenetic scale. These analogies further reinforce the idea that plasticity of consciousness remains a key factor in successful biological adaptation.

*Of Related Interest*


Abstract: The practice of meditation, specifically Qigong, was hypothesized as being potentially helpful to HIV-infected individual. The intervention was assumed to be stress-reducing. Anxiety, depression and T-cell counts were measured. A statistically significant
increase in T-cells and a statistically significant decrease in anxiety and depression were found. A control group was not included in this pilot study.


“After many years in Korea, I’m just beginning to break the Korean shell and experience its rich spiritual culture. Korea has much more to offer the world than kimchi and ‘the red devils.’ I’d like to introduce the world to the Korean form of meditation called ‘Seon-do’ Practice. It’s more than 5,000 years old and precedes Buddhism, Taoism, Confucianism and others. The focus is on the ‘living’ breath, which can only be found by focusing on the ‘Dan-jeon’ spot. Dan-jeon is known as ‘tan-tien’ in Chinese and ‘hara’ in Japanese. Yoga uses a chakra to describe the location but doesn’t use methods to store energy there: which is the main point of using the Dan-jeon, located five inches below the navel.

“The essence of Seon-do practice is in concentrating on the breathing point, after having controlled your emotions, practiced muscles exercises, and lowered your consciousness. You’ll find that this is not mindfulness—but mindlessness. Masters throughout Asia have searched for correct Dan-jeon breathing, understanding that it’s the origin of all breathing techniques, but many have not had the patience or the correct teacher to learn it. Even now, we receive phone calls from monks from time to time asking how to do the breathing method!

“Meditation in the ‘lotus position’ is not emphasized until your breathing point has been found, and it takes six months of lying down breathing just to find the location . . .”

Ongoing Research

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Dr. Manocha is Barry Wren Fellow at the Royal Hospital for Women, where he initiated the Meditation Research Program in the hospital’s Natural Therapies Unit. Using the sahaja yoga meditation technique, the research has shown promising results for the treatment of asthma, headache, menopause and depression.

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“. . . the conference will examine how practices such as meditation influence brain function, emotions and physical health. To be held in the new W. M. Keck Laboratory for Functional Brain Imaging and Behavior and the Fluno Center, the meeting will bring together a small international group of scientists who are leaders in this field of research [as well as His Holiness the Dalai Lama]. Another featured guest will be Matthieu Ricard, a French molecular biologist who has been a Buddhist monk for 20 years and is the author of The Monk and the Philosopher. Ricard has agreed to participate in research during his visit. He will undergo brain scans at the new imaging laboratory. The results of the imaging will be compared with that of other research subjects to help determine whether a disciplined practice such as meditation can elicit brain changes.”