

Stress Management Techniques: evidence-based procedures that reduce stress and promote health

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Abstract

Purpose: According to the World Health Organization, stress is a significant problem of our times and affects both physical as well as the mental health of people. Stress is defined as a situation where the organism's homeostasis is threatened or the organism perceives a situation as threatening.

Stress coping methods are the cognitive, behavioral and psychological efforts to deal with stress.

Method: After a thorough literature review in major databases (MEDLINE, Scopus, Science Direct) the following techniques were identified and are presented and briefly discussed here: progressive muscle relaxation, autogenic training, relaxation response, biofeedback, emotional freedom technique, guided imagery, diaphragmatic breathing, transcendental meditation, cognitive behavioral therapy, mindfulness-based stress reduction and emotional freedom technique.

Conclusion: These are all evidence-based techniques, easy to learn and practice, with good results in individuals with good health or with a disease.

Key words: stress, stress management techniques, evidence based techniques

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Introduction

Life exists through the maintenance of a complex dynamic equilibrium, termed *homeostasis*, that is constantly challenged by internal or external adverse forces, termed *stressors*, which can be emotional or physical in nature. Thus, *stress* is defined as a state of threatened or

perceived by the individual as threatened homeostasis and it is re-established by a complex repertoire of behavioural and physiologic *adaptive responses* of the organism¹. Neuroendocrine hormones have a crucial role in coordinating basic as well as threatened homeostasis; also, they intervene

in pathogenesis of dyshomeostatic or cacosstatic situations of disease¹.

The Stress System located both in the central and peripheral nervous system, generically activated whenever a threshold of any stressor is exceeded, plays a major coordinator role in the re-establishment of homeostasis by eliciting a complex behavioral and physical adaptive response. This response is defined as the stress syndrome and represents the unfolding of a relatively stereotypic, innate program of the organism that has evolved to coordinate homeostasis and protect the individual during stress¹.

Stress, health and illness

According to the World Health Organization² stress, especially that relating to work, is the second most frequent health problem, impacting one third of employed people in the European Union.

There is a substantial body of research connecting stress to cardiovascular disease³, the future manifestation of hypertension related to the individual's response to stress⁴, metabolic syndrome⁵, obesity⁶, emotional overeating⁷, while stress fuels approximately 50% of depression cases through disturbance of the HPA axis⁸ and increased cortisol levels.

Furthermore, biological markers associate the immunoendocrinological disturbance brought by stress to infertility⁹. There are also research data pin pointing the role of stress in infectious disease¹⁰ and cancer¹¹. Given the negative impact of stress at intrapersonal and somatic level, it is important for healthcare professionals to master a repertoire of stress management techniques and teach them to their patients.

It should be noted that stress management techniques are applicable not only to people who manifest a disease or disorder, but also to healthy people, when added to daily routine practice as an effective tool for health enhancement and protection over the life span, serving thus as a valuable intervention for the "healthy population" as well. Health promotion, as

one of the main approaches to health enhancement, can serve this multiple role by designing and applying interventions to reduce or prevent distress and adequately contribute to future health and wellness.

Evidence-based stress management techniques

Progressive Muscle Relaxation (PMR)

Origins: Progressive muscle relaxation (PMR) is a technique for reducing stress and anxiety by alternately tensing and relaxing the muscles¹². It was developed by American physician Edmund Jacobson in the early 1920s. Jacobson argued that since muscle tension accompanies anxiety, one can reduce anxiety by learning how to relax the muscular tension. PMR entails a physical and mental component¹³.

Method/Pathophysiology: The physical component involves the tensing and relaxing of muscle groups over the legs, abdomen, chest, arms and face. In a sequential pattern, with eyes closed, the individual places a tension in a given muscle group purposefully for approximately 10 seconds and then releases it for 20 seconds before continuing with the next muscle group. The mental component requires that the individual focuses on the distinction between the feelings of the tension and relaxation. With practice, the patient learns how to effectively relax in a short period of time.

Relaxation must be attempted in order to reduce pain or pain perception and tension, create a pleasant mental state, reduce anticipatory anxiety, reduce anxiety as a response to stress, increase parasympathetic activities, increase knowledge concerning muscle tension and autonomous stimuli, improve concentration, increase the feeling of control, improve the ability to block inner talk, energize and improve sleep, decrease the cardiac index, lower blood pressure, warm or cool body parts, enhance performance of physical activities and help in the relationship with others¹⁴. Therefore, the individual is taught by a trained professional, manual or

audio how to progressively relax major muscle groups and performs the sequence 2-3 times daily for 15-20 minutes per session.

Results/Benefits: Among PMR long-term benefits the following are included: reduction of salivary cortisol levels and generalized anxiety¹³, decreased blood pressure^{13, 15} and heart rate¹⁵, decreased headaches¹⁶ better management of cardiac rehabilitation¹⁷, improvement of quality of life of patients after bypass surgery¹⁸ and improvement of quality of life of patients with multiple sclerosis¹⁹.

Autogenic Training (AT)

Origins: Autogenic training (AT) is a self-relaxation procedure by which a psychophysiological determined relaxation response is elicited. This relaxation technique was developed by Johannes Heinrich Schultz²⁰. AT aims to achieve deep relaxation and reduce stress.

Method/Pathophysiology: In AT the individual learns a set of directions/exercises that command the body to relax and control breathing, blood pressure, heartbeat, and body temperature. AT consists of six standard exercises that -with the use visual imagination and verbal cues- make the body feel warm, heavy, and relaxed. The person learns each exercise by reading about it or watching a teacher, then practicing it for a few minutes several times a day. Mastering the exercises, either from an instructor or on one's own, usually requires 4 to 6 months.

Results/Benefits: A meta-analysis of clinical outcome studies in AT found that it is useful in a range of diverse disorders including tension headache/migraine, mild-to-moderate essential hypertension, coronary heart disease, asthma bronchiale, somatoform pain disorder (unspecified type), Raynaud's disease, anxiety disorders, mild-to-moderate depression/dysthymia, and functional sleep disorders²¹.

Relaxation Response (RR)

Origins: In the 1960's, Herbert Benson of Harvard University found that there is a

counterbalancing mechanism to the stress response: just as stimulating an area of the hypothalamus can cause the stress response, so activating other areas of the brain results in its reduction. He defined this opposite state the "relaxation response."^{22- 24}.

Method/Pathophysiology: RR is a simple practice that once learned takes 10 to 20 minutes a day to achieve relaxation. The important characteristics of a relaxation program are: a) repetition of a word, sound, prayer, thought, phrase or muscular movement, through which concentration is achieved b) passive return to the repetition when other thoughts intrude.

When an organism is stressed its physiological response is the fight-or-flight response, whereas when the body is no longer in perceived danger, and the autonomic nervous system functioning returns to normal, the relaxation response (RR) occurs. During RR, the body moves from a state of physiological arousal, including increased heart rate and blood pressure, slowed digestive functioning, decreased blood flow to the extremities, increased release of stress hormones, and other responses preparing the body to fight or flight, to a state of physiological relaxation, where blood pressure, heart rate, digestive functioning and hormonal levels return to their normal state.

Results/Benefits: The RR can reduce systolic hypertension²⁵, improve cardiac rehabilitation²⁶ and relieve medical symptoms²⁷.

There is compelling evidence that the RR elicits specific gene expression changes in people who practice either short-term or long-term. The study results suggest consistent and constitutive changes in gene expression resulting from RR. These changes may relate to long term physiological effects²⁸.

Biofeedback

History: Biofeedback has its roots in the concept of homeostasis and cybernetic theory, proposing that systems are controlled by monitoring their resultsits. A team of

researchers in a landmark conference in 1969 at the Surfrider Inn in Santa Monica coined the term biofeedback from Weiner's feedback. The conference resulted in the founding of the Bio-Feedback Research Society, which permitted normally isolated researchers to contact and collaborate with each other, as well as making the term "biofeedback" popular²⁹.

Training/Psychophysiology: Biofeedback is a process that enables an individual to learn how to change physiological activity for the purposes of improving health and performance. Precise instruments measure physiological activity such as brainwaves, heart function, breathing, muscle activity, and skin temperature. These instruments rapidly and accurately 'feed back' information to the user. The presentation of this information – often in conjunction with changes in thinking, emotions, and behavior – supports desired physiological changes. Over time, these changes can endure without continued use of an instrument³⁰.

Biofeedback training is done in the presence of qualified biofeedback therapists. The therapists work with their patients and explain to them the process of reading and then responding to the physiological information relating to their body using various biofeedback devices. When patients understand and practice this concept, after several sessions spanned in 3-6 months, they are then able to take control of their physiological functions like heart beat rate, blood pressure, etc. They can also learn to observe the changes that happen when they apply the learning from the training. Sensor modalities include: the electromyograph, feedback thermometer, electrodermograph, electroencephalograph, electrocardiograph, pneumograph, capnometer, and the hemoencephalography³⁰.

Results/Benefits: Biofeedback has been used successfully for the treatment of headaches³¹, the control of high blood pressure³²⁻³⁴ and type II diabetes³⁴⁻³⁵ and cardiac disease³⁶.

Guided Imagery (GI)

History: GI is not a new approach to helping, but is well established in Native American and other indigenous traditions, in Hinduism, Judeo-Christian, and other religious traditions as well as traditional Chinese medicine³⁷. In the late 1960s, Joseph Wolpe introduced several imagery-related techniques in behaviour-modification therapy: systematic desensitization, aversive-imagery methods, symbolic-modelling techniques and implosive therapy. Since that time there have been many advocates of guided imagery³⁷. In 1982, Drs. Bresler and Rossman presented their initial findings at a conference sponsored by Marquette University and the University of San Francisco called The Power of Imagination. During this conference, leading clinicians and researchers introduced more than 1,400 health professionals nationwide to the practical applications of imagery work³⁸.

Method/Pathophysiology: The GI method is taught by a trained professional, an audio or written script in the course of 4-8 weeks, requiring 10 minutes practice per day. GI utilizes the subject's personalized images to promote health through several standardized, yet adaptable, techniques, including relaxation/stress reduction. The GI facilitator's goal is to enable the subject to engage his/her own images that are symbolic of his/her specific health or life issues, in order to develop health-directed insights, health-promoting behaviour changes, or direct physiologic changes. A facilitated exploration of an image of a safe, comfortable place specific to the participant is involved including sensory recruitment (visual, auditory, olfactory, tactile, and kinesthetic), particularly focusing on linking elements of relaxation in the image to the physiologically relaxed state simultaneously being experienced by the subject³⁹.

Results/Benefits: GI has been used successfully in stress reduction⁴⁰, in the prevention of smoking relapse⁴¹, in the treatment of depression⁴², as an adjuvant cancer therapy⁴³, as an anxiety treatment prior to diagnostic cardiac catheterization⁴⁴ on surgical stress and wound healing⁴⁵ and in

patients undergoing coronary artery bypass graft surgery⁴⁶, in the management of patients undergoing bone marrow transplantation⁴⁷, for cancer pain and management⁴⁸⁻⁴⁹, for asthma management⁵⁰, for pain management⁵¹⁻⁵², for overweight adolescents⁵³.

Diaphragmatic Breathing

Origin: The natural act of breathing has been used as a means of relaxation intuitively, has been traditionally part of different yoga traditions and is now incorporated in many relaxation programs.

Method/Pathophysiology: Diaphragmatic breathing, or abdominal or belly or deep breathing is marked by expansion of the abdomen rather than the chest when breathing.

Diaphragmatic breathing is defined as a manipulation of breath movement, contributing to a physiologic response characterized by (a) the presence of decreased oxygen consumption, decreased heart rate and blood pressure, and (b) increased theta wave amplitude in EEG recordings, increased parasympathetic activity accompanied by the experience of alertness and invigorating⁵⁴.

It is hypothesized that voluntary slow deep breathing functionally resets the autonomic nervous system through stretch-induced inhibitory signals and hyperpolarisation currents propagated through both neural and non-neural tissue which synchronizes neural elements in the heart, lungs, limbic system and cortex⁵⁴.

Patients are taught by a trained professional, manual or audio how to inhale and exhale deeper and slower. They need to practice several times a day, or as needed, for a few minutes to see immediate benefits.

Results/Benefits: Deep breathing has been successfully used to decrease the fatigue associated with haemopoietic stem cell transplantation patients⁵⁵, to reduce the anxiety and asthma signs/symptoms of children with asthma⁵⁶, in the management of acute stressful tasks⁵⁷ showing that the slow-breathing technique can have a

significant effect on improvement of the hemodynamic changes following the acute stressful tasks. Furthermore, it has been used to influence autonomic functions in patients with essential hypertension and thus reduce it⁵⁸⁻⁵⁹, in the management of male adolescent aggressive behaviour⁶⁰, in long term prophylaxis of migraine⁶¹, in stress related to dental visits⁶².

Transcendental Meditation™

History: The TM technique, a simple, psychophysiological stress reduction procedure, was introduced to the West by Maharishi Mahesh Yogi, a scholar of the ancient Vedic tradition of India⁶³.

Method/Pathophysiology: The TM technique is simple and easily learned, requiring to be practiced for 20 minutes twice daily while sitting with eyes closed and repeating a 'mantra', a meaningless sequence of sounds specific to each individual, to promote a natural shift of awareness to a wakeful but deeply restful state⁶⁴. TM is not a religion or philosophy and is taught through a seven-step course of instruction by a certified TM teacher. During the TM practice, a reduction in mental and physical activity occurs and that is the result of the individual's experience of a mental state called "transcendental consciousness," which is different from usual waking, dreaming, or sleep states. This experience is deemed responsible for the restoration of normal function of various bodily systems, especially those involved in adapting to environmental "stressors" or challenges⁶³. TM increases frontal and alpha central activity⁶⁴ and neuroimaging studies indicate increased regional cerebral blood flow measures during meditation⁶⁵.

Studies show that regular practice of TM has an impact on the brain's electrophysiologic characteristics, improving brain functioning⁶⁶⁻⁶⁹ and attention⁷⁰⁻⁷¹. During TM practice there is improved cortical coherence between and within hemispheres⁷²⁻⁷³. Regular practice of TM leads to reduced medical care utilization and expenditures⁷⁴⁻⁷⁷. Additionally, research data

shows that TM helps patients become more resilient under stressful situation, reducing the more concrete pathophysiologic signs or symptoms of cardiovascular disease.

Results/Benefits: The TM technique appears to be distinctively effective in modifying several clinically relevant physiological and psychological outcomes in different disorders. There is substantial evidence indicating that psychological stress contributes to hypertension and cardiovascular disease and that TM can lower blood pressure⁷⁸⁻⁸⁴. A recent meta analysis concluded that TM shows clinical and statistical changes in lowering blood pressure, and it should be recommended to patients in preventing or treating hypertension.

TM can also help in reduced atherosclerosis/stroke⁸⁵⁻⁸⁷, can lead to reduced congestive heart failure⁸⁸, lower components of the metabolic syndrome and pre-diabetes⁸⁹, provide adjunctive non-pharmacological analgesia for invasive medical procedures⁹⁰. Clinical effects of TM impact a broad spectrum of physical and psychological symptoms and syndromes, including reduced anxiety, pain, and depression, enhanced mood and self-esteem⁹¹, decreased stress⁹²⁻⁹⁶, and faster recovery from stress

Cognitive Behavioral Therapy (CBT)

Origins: Cognitive behaviour therapy (CBT) was developed through a merging of behaviour therapy with cognitive therapy and though rooted in different theories, these two traditions share a common focusing on the present time and on alleviating symptoms⁹⁷.

Method/Pathophysiology: CBT is an established; evidence based structured and time-limited psychological treatment for several health conditions such as anxiety disorders, major depression, and health problems such as insomnia, headache, and tinnitus among others. Briefly, CBT is a treatment approach that encompasses assessment strategies, cognitive and behavioural treatment techniques, and relies on collaboration between clinician and patient, who has the responsibility to

complete homework assignments⁹⁸. Cognitive change and the resulting behavioural change relate to cognitive restructuring, which proposes that people are directly responsible for generating dysfunctional emotions and their resultant behaviours, like stress, depression, anxiety, something that can be prevented by changing thought patterns. Cognitive restructuring is the process of learning to refute cognitive distortions, aiming to replace one's irrational, counter-factual beliefs with more accurate and beneficial ones. This is established by helping the individual gain awareness of detrimental thought habits, learn to challenge them and substitute life-enhancing thoughts and beliefs⁹⁹.

There are documented CBT-related neurobiological changes showing that it can modify the dysfunctional neural activity related to anxiety disorders in the patients who responded to treatment¹⁰⁰.

Results/Benefits: CBT has been used successfully in the management of cardiovascular disorder¹⁰¹⁻¹⁰⁴, of diabetes¹⁰⁵⁻¹⁰⁷, of chronic fatigue syndrome¹⁰⁸, of Pain management¹⁰⁹, of Headaches¹¹⁰⁻¹¹¹, of overweight and obesity¹¹², of depression and stress related to infertility¹¹³⁻¹¹⁴, of anxiety disorders¹¹⁵ and stress management¹¹⁶⁻¹¹⁷.

Mindfulness-Based Stress Reduction (MBSR)

Origins: Mindfulness-Based Stress Reduction was pioneered by Jon Kabat-Zinn, Ph.D. and assisted by Saki Santorelli, Ph.D. and colleagues in 1979 at the University Of Massachusetts Medical Center. MBSR classes are usually taught by physicians, nurses, social workers, and psychologists, who are seeking to reclaim and deepen some of the unique reciprocity inherent in the doctor-caregiver/patient-client relationship. Mindfulness-Based Cognitive Therapy (MBCT) is a form of MBSR that provides information about depression and cognitive therapy-based exercises that link thinking and its resulting impact on feeling¹¹⁸.

Method/Pathophysiology: MBSR is a structured 8-week group program employing mindfulness meditation in order to alleviate mental and physical suffering, associated

with physical, psychosomatic and psychiatric disorders. MBSR is not a religion or dogma and is based upon a systematic procedure to develop enhanced awareness of moment-to-moment experience of one's own mental process. The technique assumes that greater awareness of the here-and-now will provide clearer and more accurate perception, reduce negative affect and improve energy and coping¹¹⁹⁻¹²¹. Systematic mindfulness training can influence brain areas involved in regulating attention, awareness, and emotion¹²².

Results/Benefits: MBSR has been used successfully on mood and cardiovascular variables¹²³, in the management of diabetes¹²⁴⁻¹²⁵, in chronic disease¹²⁶, in chronic pain¹²⁷. MBSR may improve patients' psychosocial adjustment to cancer¹²⁸ and offer psychological and health benefits to cancer patients¹²⁹⁻¹³⁰, it increases natural killer cells activity¹³¹, it can control severe headaches¹³² it helps reduce stress in patients with aneurysmal haemorrhage¹³³ and is effective for anxiety and depression in individuals¹³⁴⁻¹³⁵ and groups¹³⁶⁻¹³⁷.

Emotional Freedom Technique (EFT)

Origins: EFT, introduced by Gary Craig in the 90's, a brief exposure therapy that combines a cognitive and a somatic element, is based on the discovery that emotional trauma contributes greatly to disease. Scientific studies have shown that EFT is able to rapidly reduce the emotional impact of memories and incidents that trigger emotional distress. Once the distress is reduced or removed, the body can often rebalance itself, and accelerate healing¹³⁸.

Method/Pathophysiology: EFT works by a person tapping on nine of acupoints, while speaking aloud a specific, meaningful short phrase. A key part of the therapy is calibrating the intensity of either physical or emotional pain, which allows both therapist and patient a tangible scale by which to measure progress in pain or emotional distress reduction¹³⁸. According to the literature, imaginal exposure, paired with acupressure, reduces midbrain hyperarousal

and counterconditions anxiety and traumatic memories. Exposure therapies like EFT first elicit the midbrain's anxiety reflex and then replace it with a relaxation response, in order to "reciprocally inhibit" anxiety¹³⁹. It is also indicated that manual stimulation of acupuncture points produces opioids, serotonin, and gamma-aminobutyric acid (GABA), and regulates cortisol, the stress hormone¹³⁹. These neurochemical changes lead to reduction of pain, slowing of the heart rate, decreased anxiety, shutting off the fight or flight response, and regulation of the autonomic nervous system, as well as to the creation of a sense of calm¹³⁹.

Results/Benefits: EFT leads to reduced pain perception, increased acceptance, coping ability and health-related quality of life in individuals with fibromyalgia has an immediate effect on specific phobias¹⁴⁰⁻¹⁴¹ on anxiety and depression¹⁴²⁻¹⁴³, on psychological trauma and PTSD¹⁴⁴⁻¹⁴⁵ as well as in the trauma following coronary heart disease¹⁴⁵.

Conclusion

It is established that via complex neuroendocrinological mechanisms stress contributes to the aetiopathogenesis, initiation and continuation, aggravation of the disease, or quality of life of patients. Current research findings support the notion that evidence-based stress reduction techniques can lower stress levels of the organism, resulting in reduction of disease symptoms, lowering of biological indicators of disease, prevention of disease and/or improvement of patient's quality of life. As stress is universal and of relevance to all, a more thorough understanding of stress management techniques is essential for preventing stress related disease and enhancing health overall. Thus, it should be incorporated into all levels of prevention, addressing the need of different populations and in different settings.

In the present paper we attempted a review of some of the most commonly used, evidence-based stress reduction techniques for health related problems such as

cardiovascular disease, high blood pressure, diabetes, obesity, and headaches. However, there is extensive well-documented literature for the use of the same techniques for other medical issues, such as cancer, gastrointestinal problems, pregnancy, to mention a few. In addition, stress management is effective for preventing behaviors such as smoking, unhealthy eating habits, sedentary lifestyle choices to name a few-, behaviors that serve as risk factors for the majority of the aforementioned disease and disorders. The selection of the techniques presented reflects those that are being taught in our program and used in our research.

It is concluded that progressive muscle relaxation, autogenic training, relaxation response, biofeedback, guided imagery, diaphragmatic breathing, transcendental meditation, cognitive behavioral stress reduction and mindfulness-based stress reduction are all effective treatment methods for reducing stress and anxiety that accompanies daily life and chronic illness. The stress reduction techniques reviewed in this paper also improve the quality of life of patients and in many cases contribute in the reduction of disease symptoms. The same techniques are also therapeutic for healthcare providers, enhancing their interactions with patients. No negative side effects from any of those techniques have been documented.

However, the literature shows that there is a need for more extensive randomized control trials of the aforementioned stress-reduction techniques in order to establish their usefulness in the prevention and management of disease. There is also a need to include more biological measures in order to quantify symptom reduction and investigate the pathophysiological mechanisms connecting stress, disease and health.

IMPLICATIONS FOR PRACTICE: Stress reduction techniques constitute a safe and effective approach for reducing stress. Patients and healthcare providers experiencing stress or stress-related

symptoms can benefit from the programs presented in this paper. With proper training, health visitors, nurses, physicians and other health professionals can safely and effectively use these interventions in a variety of patient and healthy populations.

Bibliography

1. Chrousos G. P., Gold P. W. The concepts of stress and stress system disorders: overview of physical and behavioral homeostasis. *Journal of American Medical Association*, 1992; 267, 1244- 1252.
2. WHO. Facing the Challenges, Building Solution. Report from the WHO European Ministerial Conference. The Regional Office for Europe of the World Health Organization Retrieved January 21 2011, from http://www.euro.who.int/__data/assets/pdf_file/0008/96452/E87301.pdf.
3. Lambert G, Schlaich M, Lambert E, Dawood T, Esler M. Stress reactivity and its association with increased cardiovascular risk: a role for the sympathetic nervous system? *Hypertension*, 2010; 55(6):e20.
4. Spruill T.M. Chronic psychosocial stress and hypertension. *Curr Hypertens Rep*, 2010; 12(1), 10-16.
5. Kyrou I., Tsigos C. Hypothalamic-pituitary-adrenal axis, cytokines and metabolic syndrome. *Obesity and Metabolism*, 2006; 2, 116-126.
6. Brunner E.J., Chandola T., Marmot M.G. Prospective effect of job strain on general and central obesity in the Whitehall II study. *American Journal of Epidemiology*, 2007; 165, 828-837.
7. Adam T. C., Empel E. S. Stress eating and the reward system. *Physiology & Behavior*, 2007; 91, 449-458.
8. Nemeroff C.B., Vale, W.W. The neurobiology of depression: In roads to treatment and new drug discovery. *Journal of Clinical Psychiatry*, 2005; 66, 5-13.
9. Li X.H., Ma, Y.G., Geng, L.H., Qin, L., Hu, H., & Li, S.W. Baseline psychological stress and ovarian norepinephrine levels

- negatively affect the outcome of in vitro fertilisation. *Gynecol Endocrinol*, 2011 Mar; 27(3):139-43
10. Pedersen A., Zachariae, R., Bovbjerg D.H. Influence of Psychological Stress on Upper Respiratory Infection--A Meta-Analysis of Prospective Studies. *Psychosom Med*. 2010 Oct; 72(8):823-32
 11. McGregor, B.A., Antoni M.H. Psychological intervention and health outcomes among women treated for breast cancer: a review of stress pathways and biological mediators. *Brain Behav Immun*, 2009; 23(2), 159-166.
 12. Jacobson E. *Progressive relaxation*. Chicago: University of Chicago Press;1938.
 13. Pawlow L. A., Jones, G. E. The impact of abbreviated progressive muscle relaxation on salivary cortisol. *Biological Psychology*, 2002; 60 (1), 1-16.
 14. Titlebaum H. M. *Relaxation*. *Holistic Nursing Practice*, 1998; 2(3), 17-25.
 15. Sheu S., Irvin, B. L., Lin, H.S, Mar, C. L. Effects of Progressive Muscle Relaxation on Blood Pressure and Psychosocial Status for Clients with Essential Hypertension in Taiwan. *Holistic Nursing Practice*, 2003; 17 (1), 41-47.
 16. Anderson, R. E., & Seniscal, C. A comparison of selected osteopathic treatment and relaxation for tension-type headaches. *Headache*, 2001; 46(8), 1273-1280.
 17. Wilk, C, Turkoski B. Progressive muscle relaxation in cardiac rehabilitation: a pilot study. *Rehabilitation Nursing*, 2001; 26(6), 238-242.
 18. Dehdari, T., Heidarnia, A., Ramezankhani, A., Sadeghian, S., & Ghofranipour, F. Effects of progressive muscular relaxation training on quality of life in anxious patients after coronary artery bypass graft surgery. *Indian J Med Res*, 2009; 129(5), 603-608.
 19. Ghafari, S., Ahmadi, F., Nabavi, M., Anoshirvan, K., Memarian R., Rafatbakhsh M. Effectiveness of applying progressive muscle relaxation technique on quality of life of patients with multiple sclerosis. *J Clin Nurs*, 2009; 18(15), 2171-2179.
 20. Schultz J. H., Luthe W. *Autogenic training: A psychophysiologic approach in psychotherapy*. New York: Grune and Stratton; 1959.
 21. Stetter F., Kupper, S. *Autogenic training: a meta-analysis of clinical outcome studies*. *Applied Psychophysiology and Biofeedback*, 2002; 27(1), 45-98.
 22. Benson, H. Klipper, M.Z. *The relaxation response*. Avon Books; 2000.
 23. Jacobs G.D. *The Physiology of Mind-Body Interactions: The Stress Response and the Relaxation Response*. *Journal of Alternative and Complimentary Medicine*, 2001; 7(1), 83-92.
 24. Jacobs G.D. *Clinical Applications of the Relaxation Response and Mind-Body Interventions*. *Journal of Alternative and Complimentary Medicine*, 2001; 7, 93-101.
 25. Dusek J. A., Hibberd P.L., Buczynski B., Chang B.H., Dusek K.C., Johnston J.M., Wohlhueter A.L., Benson H., Zusman R.M. Stress management versus lifestyle modification on systolic hypertension and medication elimination: a randomized trial. *J Altern Complement Med*, 2008; 14(2), 129-138.
 26. Chang B.H., Casey, A., Dusek J.A, Benson H. Relaxation response and spirituality: Pathways to improve psychological outcomes in cardiac rehabilitation. *J Psychosom*, 2010; 69(2), 93-100.
 27. Samuelson M., Foret, M., Baim, M., Lerner, J., Fricchione, G., Benson, H., Dusek, J., & Yeung, A. Exploring the effectiveness of a comprehensive mind-body intervention for medical symptom relief. *J Altern Complement Med*, 2010; 16(2), 187-192.
 28. Dusek J.A., Out H.H., Wohlhueter A.L., Bhasin M., Zerbini, L.F., Joseph M.G., Benson, H., & Libermann, T.A. Genomic counter-stress changes induced by the relaxation response. *PLoS One*, 2008; 3(7):e2576.
 29. Moss, D. *Biofeedback, mind-body medicine, and the higher limits of human*

- nature. Humanistic and transpersonal psychology: a historical and biographical sourcebook. Westport, Conn: Greenwood Press; 1999.
30. Association for Applied Psychophysiology and Biofeedback. "What is biofeedback?". Retrieved October 2, 2010, from <http://www.aapb.org>
 31. Nestoriuc Y., Martin A., Rief W., Andrasik F. Biofeedback treatment for headache disorders: a comprehensive efficacy review. *Appl Psychophysiol Biofeedback*, 2008; 33 (3), 125-140.
 32. Linden W., Moseley J.V. The efficacy of behavioral treatments for hypertension. *Appl Psychophysiol Biofeedback*, 2006; 31(1), 51-63.
 33. Tsai P.S., Chang N.C., Chang W.Y., Lee P.H., Wang M.Y. Blood pressure biofeedback exerts intermediate-term effects on blood pressure and pressure reactivity in individuals with mild hypertension: a randomized controlled study. *J Altern Complement Med*, 2007; 13(5), 547-554.
 34. McGrady A. The effects of biofeedback in diabetes and essential hypertension. *Cleve Clin J Med*, 2010; 77(3), 68-71.
 35. McGinnis R.A., McGrady A., Cox S.A., Grower-Dowling K.A. Biofeedback-assisted relaxation in type 2 diabetes. *Diabetes Care*, 2005; 28(9), 2145-2149.
 36. Cowan M. J., Pike K. C., Budzynski, H. K. Psychosocial nursing therapy following sudden cardiac arrest: Impact on two-year survival. *Nursing Research*, 2001; 50, 68-76.
 37. Joe, U. "Guided imagery as an effective therapeutic technique: a brief review of its history and efficacy research". *Journal of Instructional Psychology*, 2006; 33(1), 40- 43.
 38. Academy for Guided Imagery. History of AGI. Retrieved October 10, 2010, from <http://www.academyforguidedimagery.com/abouttheacademy/page13/page13.html>.
 39. Weigensberg M.J., Lane C.J., Winners O., Wright T., Nguyen-Rodriguez S., Goran M.I., Spruijt-Metz D. Acute effects of stress-reduction Interactive Guided Imagery (SM) on salivary cortisol in overweight Latino adolescents. *J Altern Complement Med*, 2009; 15(3), 297-303.
 40. Carter E. Pre-packaged guided imagery for stress reduction: Initial results. *Counselling, Psychotherapy, and Health*, 2006; 2 (2), 27-39.
 41. Wynd C. A. Relaxation imagery used for stress reduction in the prevention of smoking relapse. *Journal of Advanced Nursing*, 2006; 17 (3), 294-302.
 42. Lin M.F., Hsu, M.C., Chang, H.J., Hsu, Y.Y., Chou, M.H., & Crawford, P. Pivotal moments and changes in the Bonny Method of Guided Imagery and Music for patients with depression. *J Clin Nurs*, 2010; 19 (7-8), 1139-1148.
 43. Roffe L., Schmidt, K., Ernst, E. A systematic review of guided imagery as an adjuvant cancer therapy. *Psychooncology*, 2005; 14(8), 607-617.
 44. McCaffrey R., Taylor, N. Effective anxiety treatment prior to diagnostic cardiac catheterization. *Holist Nurs Pract*, 2005; 19(2), 70-73.
 45. Holden-Lund C. Effects of relaxation with guided imagery on surgical stress and wound healing. *Research in Nursing and Health*, 2007; 11 (4), 235-244.
 46. Stein, T.R., Olivo, E.L., Grand, S.H., Namerow, P.B., Costa, J., Oz, M.C. A pilot study to assess the effects of a guided imagery audiotope intervention on psychological outcomes in patients undergoing coronary artery bypass graft surgery. *Holist Nurs Pract*, 2010; 24(4), 213-222.
 47. Sahler O.J., Hunter, B.C., Liesveld J.L. The effect of using music therapy with relaxation imagery in the management of patients undergoing bone marrow transplantation: a pilot feasibility study. *Altern Ther Health Med.*, 2003; 9(6), 70-74.
 48. Kwekkeboom K.L., Kneip J., Pearson L. A pilot study to predict success with guided imagery for cancer pain. *Pain Manag Nurs.*, 2003; 4(3), 112-123.
 49. León-Pizarro C., Gich I., Barthe E., Roviroso A., Farrús B., Casas F., Verger E., Biete A., Craven-Bartle J., Sierra J.,

- Arcusa A. A randomized trial of the effect of training in relaxation and guided imagery techniques in improving psychological and quality-of-life indices for gynecologic and breast brachytherapy patients. *Psychooncology*, 2007; 16(11), 971-979.
50. Epstein G.N., Halper J.P., Barrett E.A., Birdsall, C., McGee, M., Baron K.P., Lowenstein S. A pilot study of mind-body changes in adults with asthma who practice mental imagery. *Altern Ther Health Med.*, 2004; 10(4):66-71.
 51. Menzies V., Taylor A.G., Bourguignon C. Effects of guided imagery on outcomes of pain, functional status, and self-efficacy in persons diagnosed with fibromyalgia. *J Altern Complement Med.*, 2006; 12(1), 23-30.
 52. Antall G.F., Kresevic D. The use of guided imagery to manage pain in an elderly orthopaedic population. *Orthop Nurs.*, 2004; 23(5), 335-340.
 53. Weigensberg M.J., Lane C.J., Winners O., Wright T., Nguyen-Rodriguez S., Goran M.I., Spruijt-Metz, D. Acute effects of stress-reduction Interactive Guided Imagery(SM) on salivary cortisol in overweight Latino adolescents. *J Altern Complement Med.*, 2003; 15(3), 297-303.
 54. Jerath R., Edry J.W., Barnes V.A., Jerath V. Physiology of long pranayamic breathing: neural respiratory elements may provide a mechanism that explains how slow deep breathing shifts the autonomic nervous system. *Med Hypotheses*, 2006; 67(3), 566-571.
 55. Sang-Dol K., Hee-Seung K. Effects of a relaxation breathing exercise on fatigue in haemopoietic stem cell transplantation patients. *Journal of Clinical Nursing*, 2005; 14(1), 51-55.
 56. Chiang L.C., Ma W.F., Huang J.L., Tseng L.F., Hsueh, K.C. Effect of relaxation-breathing training on anxiety and asthma signs/symptoms of children with moderate-to-severe asthma: a randomized controlled trial. *Int J Nurs Stud.*, 2009; 46(8), 1061-1070.
 57. Nogawa M., Yamakoshi T., Ikarashi A., Tanaka S., Yamakoshi, K. Assessment of slow-breathing relaxation technique in acute stressful tasks using a multipurpose non-invasive beat-by-beat cardiovascular monitoring system. *Conf Proc IEEE Eng Med Biol Soc*, 2007; 5323-5325.
 58. Mourya M., Mahajan A.S., Singh N.P., Jain A.K. Effect of slow- and fast-breathing exercises on autonomic functions in patients with essential hypertension. *J Altern Complement Med.*, 2009; 15(7), 711-717.
 59. Kaushik R.M., Kaushik R., Mahajan S.K., Rajesh V. Effects of mental relaxation and slow breathing in essential hypertension. *Complement Ther Med.*, 2006; 14(2), 120-126.
 60. Gaines T., Barry L.M. The effect of a self-monitored relaxation breathing exercise on male adolescent aggressive behavior. *Adolescence*, 2008 43(170), 291-302.
 61. Kaushik, R., Kaushik, R.M., Mahajan, S, K., Rajesh, V. Biofeedback assisted diaphragmatic breathing and systematic relaxation versus propranolol in long term prophylaxis of migraine. *Complement Ther Med.*, 2005; 13(3), 165-174.
 62. Biggs Q.M., Kelly K.S., Toney J.D. The effects of deep diaphragmatic breathing and focused attention on dental anxiety in a private practice setting. *J Dent Hyg*, 2003; 77(2), 105-113.
 63. Walton, K.G., Schneider, R.H., & Nidich, S. Review of controlled research on the transcendental meditation program and cardiovascular disease. Risk factors, morbidity, and mortality. *Cardiol Rev*, 2004; 12(5), 262-266.
 64. Jevning R., Wallace R.K., Biedebach M. The physiology of meditation: a review. A wakeful hypometabolic integrated response. *Neuroscience and Biobehavioral Reviews*, 1992; 16, 415-424.
 65. Cahn B.R., Polich J. Meditation states and traits: EEG, ERP, and neuroimaging studies. *Psychol Bull.*, 2006; 132(2), 180-211.
 66. Badawi K., Wallace K., Orme-Johnson D., Rouzere, A.M. Electrophysiologic characteristics of respiratory suspension

- periods occurring during the practice of the Transcendental Meditation Program. *Psychosom Med*, 1984; 46, 267-276.
67. Travis F., Wallace R.K. Automatic and EEG patterns during eyes-closed rest and transcendental meditation (TM) practice: The basic for a neural model of TM practice. *Consciousness and Cognition*, 1999; 8, 302-318.
 68. Lazar S.W., Bush G., Gollub RL, Fricchione, G. L. Khalsa G., Benson, H. Functional brain mapping of the relaxation response and meditation. *Neuroreport*, 2000; 11(7), 1581-1585.
 69. Aftanas L., Golosheykin S. Impact Of Regular Meditation Practice On Eeg Activity At Rest And During Evoked Negative Emotions. *International Journal of Neuroscience*, 2005; 115 (6), 893 - 909.
 70. Lutz A., Slagter H. A., Dunne J. D., Davidson, R. J. Attention regulation and monitoring in meditation. *Trends Cogn Sci*, 2008; 12(4), 163-169.
 71. Travis F., Shear J. Focused attention, open monitoring and automatic self-transcending: Categories to organize meditations from Vedic, Buddhist and Chinese traditions. *Consciousness and Cognition*, 2010; 19(4), 1110-1118.
 72. Orme-Johnson D.W., Haynes C.T. Eeg Phase Coherence, Pure Consciousness, Creativity, and Tm-Sidhi Experiences. *International Journal of Neuroscience* 1981; 13 (4), 211-217.
 73. Russell H., Dietrich L., Gabriel T., Fred T., Alarik, A. Enhanced EEG alpha time-domain phase synchrony during Transcendental Meditation: Implications for cortical integration theory. *Signal Processing*, 2005; 85, 2213-2232.
 74. Orme-Johnson D. Medical care utilization and the transcendental meditation program. *Psychosom Med*, 1987; 49 (5), 493-507.
 75. Michael T., Joseph L. Thomas, R., Glenda, O. Patient-management Strategies. *American Journal of Managed Care*, 2007; 11, 140-147.
 76. Orme-Johnson D.W., Herron R.E. Reduced Medical Care Utilization and Expenditures through an Innovative Approach. *American Journal of Managed Care*, 1997; 3, 135-144.
 77. Schneider R.H, Walton K.G, Salerno J.W, Nidich S.I. Cardiovascular disease prevention and health promotion with the transcendental meditation program and Maharishi consciousness-based health care. *Ethn Dis*. 2006; 16(3 Suppl 4):S4-15-26.
 78. Anderson J.W., Liu C., Kryscio R. J. Blood pressure response to Transcendental Meditation: a meta-analysis. *American Journal of Hypertension* 2008; 21 (3), 310-316.
 79. Barnes V.A., Treiber F.A., Johnson M. H. Impact of Transcendental Meditation on ambulatory blood pressure in African-American adolescents. *American Journal of Hypertension*, 2004; 17, 366-369.
 80. Nidich S.I., Rainforth M.V., Haaga D.A., Hagelin J., Salerno J.W., Travis F., Tanner M., Gaylord-King C., Grosswald, S., Schneider R.H. A randomized controlled trial on effects of the Transcendental Meditation program on blood pressure, psychological distress, and coping in young adults. *Am J Hypertens*, 2009; 22(12), 1326-1331.
 81. Schneider R.H., Staggers F., Alexander C., Sheppard W., Rainforth M., Kondwani K., Smith S., King, C.G. A randomized controlled trial of stress reduction for hypertension in older African Americans. *Hypertension*, 1995; 26, 820-827.
 82. Schneider R.H. A randomized controlled trial of stress reduction in the treatment of hypertension in African Americans during one year. *American Journal of Hypertension*, 2005; 18(1), 88-98.
 83. Barnes V.A., Treiber F.A., Johnson M. Impact of Transcendental Meditation on Ambulatory Blood Pressure in African-American Adolescents. *American Journal of Hypertension*, 2004; 17, 366-369.
 84. Rainforth M .V, Schneider R.H., Nidich S.I., Gaylord-King C, Salerno J.W, Anderson J.W. Stress Reduction Programs in Patients with Elevated Blood Pressure: A Systematic Review and Meta-analysis. *Curr Hypertens Rep*. 2007; 9(6): 520-528

85. Castillo-Richmond M. A., Schneider R.H., Charles N. A., Cook R., Myers H., Nidich S., Haney C., Rainforth M., Salerno J. Effects of the Transcendental Meditation Program on carotid atherosclerosis in hypertensive African Americans. *Stroke* 2006; 31, 568-573.
86. Walton, K.G., Schneider R.H., Nidich, S.I., Salerno J.W., Nordstrom C.K., Bairey Merz C.N. Psychosocial stress and cardiovascular disease Part 2: effectiveness of the Transcendental Meditation program in treatment and prevention. *Behav Med.*, 2002; 28(3), 106-123.
87. Walton, K.G., Schneider, R.H., Nidich, S. Review of controlled research on the transcendental meditation program and cardiovascular disease. Risk factors, morbidity, and mortality. *Cardiol Rev.*, 2004; 12(5), 262-266.
88. Jayadevappa R., Johnson J.C., Bloom B.S., Nidich S., Desai S., Chhatre S., Raziano D.B., Schneider, R. Effectiveness of Transcendental Meditation on functional capacity and quality of life of African Americans with congestive heart failure: a randomized control study. *Ethnicity and Disease*, 2007; 17, 72-77.
89. Paul-Labrador M., Polk D., Dwyer J.H., Velasquez, I., Nidich S., Rainforth M., Schneider R., Merz, C.N. Effects of a randomized controlled trial of transcendental meditation on components of the metabolic syndrome in subjects with coronary heart disease. *Arch Intern Med.*, 2006; 166(11), 1218-24.
90. Lang E.V., Benotsch E.G., Fick L.J., Lutgendorf S., Berbaum M.L., Berbaum K.S., Logan H., Spiegel, D. Adjunctive non-pharmacological analgesia for invasive medical procedures: a randomised trial. *Lancet*, 2000; 355(9214), 1486-1490.
91. Bonadonna R. Meditation's impact on chronic illness. *Holistic Nursing Practice*, 2003; 17(6), 309-319.
92. Travis F., Haaga D.A., Hagelin J., Tanner M., Nidich S., Gaylord-King C., Grosswald S., Rainforth M., Schneider, R.H. Effects of Transcendental Meditation practice on brain functioning and stress reactivity in college students. *Int J Psychophysiol.*, 2009; 71(2), 170-176.
93. Walton K.G., Fields J.Z., Levitsky D.K., Harris D.A., Pugh N.D., Schneider R.H. Lowering cortisol and CVD risk in postmenopausal women: a pilot study using the Transcendental Meditation program. *Annals of New York Academy of Sciences* 2005; 1032, 211-215.
94. Barnes V. A., Treiber, F.A., Daviw H. Impact of Transcendental Meditation on cardiovascular function at rest and during acute stress in adolescents with high normal blood pressure. *Journal of Psychosomatic Research* 2001; 51, 597-605.
95. Barnes V. A., Trebier F.A., Davis H. Impact of Transcendental Meditation on cardiovascular function at rest and during acute stress in adolescents with high normal blood pressure. *Journal of Psychosomatic Research*, 2001; 51, 597-605.
96. Gaylord C., Orme-Johnson D.W., Travis F.T. The effects of the Transcendental Meditation technique and progressive muscle relaxation on EEG coherence, stress reactivity, and mental health in black adults. *International Journal of Neuroscience*, 1989; 46: 77-86.
97. Rachman S. The evolution of cognitive behaviour therapy. In D. Clark, C. G. Fairburn, & M. G. Gelder. *Science and practice of cognitive behaviour therapy*. Oxford: Oxford University Press; 1997. pp. 1-26.
98. Andersson, G. The promise and pitfalls of the internet for cognitive behavioral therapy. *BMC Medicine*, 2010;8:82, Available from: <http://www.biomedcentral.com/content/pdf/1741-7015-8-82.pdf>
99. Wikipedia. Cognitive Behavioral therapy. Retrieved January 21, 2011, from http://en.wikipedia.org/wiki/Cognitive_behavioral_therapy
100. Porto P. R., Oliveira L., Mari J., Volchan E., Figueira I., Ventura, P. Does Cognitive Behavioral Therapy Change the

- Brain? A Systematic Review of Neuroimaging in Anxiety Disorders. *J Neuropsychiatry Clin Neurosci*, 2009; 21, 114-125.
101. Gary R.A., Dunbar S. B., Higgins M. K. , Musselman, D. L., & Smith, A. L. Combined exercise and cognitive behavioral therapy improves outcomes in patients with heart failure. *Journal of Psychosomatic Research*, 2010; 69(2), 119-131.
 102. Dekker, R.L. (2011). Cognitive Therapy for Depression in Patients with Heart Failure: A Critical Review. *Heart Failure Clinics*, 2011; 7(1), 127-141.
 103. Freedland K.E., Skala J.A., Carney R.M., Rubin E.H., Lustman P.J., Dávila-Román V.G., Steinmeyer B.C., Hogue C.W. Treatment of depression after coronary artery bypass surgery: a randomized controlled trial. *Arch Gen Psychiatry*, 2009; 66(4), 387-396.
 104. Shemesh E., Annunziato R.A., Weatherley B.D., Cotter G., Feaganes J.R., Santra M., Yehuda R., Rubinstein D. A randomized controlled trial of the safety and promise of cognitive-behavioral therapy using imaginal exposure in patients with posttraumatic stress disorder resulting from cardiovascular illness. *J Clin Psychiatry*, April 6, 2010; doi:10.4088/JCP.09m05116blu
 105. Evans G., Lewin T.J., Bowen K., Lowe J. Dealing with anxiety: A pilot cognitive behavioural therapy program for diabetic clinic outpatient attendees. *International Journal of Diabetes Mellitus*, 2010; 2(1), 51-55.
 106. de Groot,M., Anderson, R., Freedland, K. E., Clouse, R.E., & Lustman, P.J. (2010). Development and reach of a web-based cognitive behavioural therapy programme to reduce symptoms of depression and diabetes-specific distress. *Patient Education and Counseling*, Forthcoming 2010. Available from: <http://arno.uvt.nl/show.cgi?fid=10738>
 107. Welschen L.M., van Oppen P., Dekker J.M., Bouter L.M., StalmanW.A., Nijpels G. The effectiveness of adding cognitive behavioural therapy aimed at changing lifestyle to managed diabetes care for patients with type 2 diabetes: design of a randomised controlled trial. *BMC Public Health*, 2007; 8;7:74.
 108. Roberts A.D., Papadopoulos A.S., Wessely S., Chalder T., Cleare A.J.. Salivary cortisol output before and after cognitive behavioural therapy for chronic fatigue syndrome. *Journal of Affective Disorders*, 2009; 115, 280-286.
 109. Turner, J. A., Holtzman, M., Mancl L. Mediators, moderators, and predictors of therapeutic change in cognitive-behavioral therapy for chronic pain. *Pain*, 2007; 127(3), 276-286.
 110. Thorn B.E, Pence L. B., Ward L. C., Kilgo G., Kristi L.C., Clements Cross, T.H., Amber M. D., Tsui P.W. A Randomized Clinical Trial of Targeted Cognitive Behavioral Treatment to Reduce Catastrophizing in Chronic Headache Sufferers. *The Journal of Pain*, 2007; 8(12), 938-949.
 111. Lakerveld J., Bot, S.D., Chinapaw M.J., van Tulder M.W., van Oppen P., Dekker J.M., Nijpels G. Primary prevention of diabetes mellitus type 2 and cardiovascular diseases using a cognitive behavior program aimed at lifestyle changes in people at risk: Design of a randomized controlled trial. *BMC Endocr Disord*, 2008; 8:6. doi:10.1186/1472-6823-8-6.
 112. Shaw K.A., O'Rourke P., Del Mar C., Kenardy J. Psychological interventions for overweight or obesity. *Cochrane Database of Systematic Reviews*, 2005; 3, Art. No.: CD003818. DOI: 10.1002/14651858.CD003818.pub2.
 113. Facchinetti F., Tarabusi M., Volpe A. Cognitive-behavioral treatment decreases cardiovascular and neuroendocrine reaction to stress in women waiting for assisted reproduction. *Psychoneuroendocrinology*, 2004; 29(2), 162-173.
 114. Faramarzi M., Alipor A., Esmaelzadeh S., Kheirkhah F., Poladi K., Pash, H. Treatment of depression and anxiety in

- infertile women: cognitive behavioral therapy versus fluoxetine. *J Affect Disord*, 2007; 108(1-2), 159-64.
115. Olatunji B.O., Cisler J.M., Deacon, B.J. Efficacy of cognitive behavioral therapy for anxiety disorders: a review of meta-analytic findings. *Psychiatr Clin North Am*, 2010; 33(3), 557-577.
 116. Neuderth S., Jabs B., Schmidtke, A. Strategies for reducing test anxiety and optimizing exam preparation in German university students: a prevention-oriented pilot project of the University of Würzburg. *J Neural Transm*, 2008; 116(6), 785-790.
 117. Granath J., Ingvarsson S., von Thiele U., Lundberg U. Stress management: a randomized study of cognitive behavioural therapy and yoga. *Cogn Behav Ther*, 2006; 35(1), 3-10.
 118. Mindful Living Programs. What is Mindfulness-Based Stress Reduction? Retrieved 26.01.201, from <http://www.mindfullivingprograms.com/whatMBSR.php>.
 119. Grossman P., Niemann L., Schmidt S., Walach, H. Mindfulness-base stress reduction and health benefits: a meta-analysis. *Journal of Psychosomatic Research*, 2004; 57, 35-43.
 120. Kerr C.E., Josyula K., Littenberg R. Developing an observing attitude: an analysis of meditation diaries in an MBSR clinical trial. *Clin Psychol Psychother*, 2011; 18(1), 80-93.
 121. Chiesa A., Serretti A. A systematic review of neurobiological and clinical features of mindfulness meditations. *Psychol Med*, 2010; 40(8), 1239-52.
 122. Greeson J.M. Mindfulness Research Update: 2008. *Complement Health Pract Rev*, 2009; 14(1), 10-18.
 123. Zeidan F., Johnson S.K., Gordon N.S., Goolkasian P. Effects of brief and sham mindfulness meditation on mood and cardiovascular variables. *J Altern Complement Med*, 2010; 16(8), 867-873.
 124. Whitebird R.R., Kreitzer M.J., O'Connor P.J. Mindfulness-Based Stress Reduction and Diabetes. *Diabetes Spectr*, 2009; 22(4), 226-230.
 125. Rosenzweig S., Reibel D.K., Greeson J.M., Edman J.S., Jasser S.A., McMearty K.D., Goldstein B.J. Mindfulness-based stress reduction is associated with improved glycemic control in type 2 diabetes mellitus: a pilot study. *Altern Ther Health Med*, 2007; 13(5), 36-38.
 126. Merkes M. Mindfulness-based stress reduction for people with chronic diseases. *Aust J Prim Health*, 2010; 16(3), 200-210.
 127. Morone N.E., Lynch C.S., Greco C.M., Tindle H.A., Weiner D.K. "I felt like a new person." the effects of mindfulness meditation on older adults with chronic pain: qualitative narrative analysis of diary entries. *J Pain*, 2008; 9(9), 841-848.
 128. Ledesma D., Kumano H. Mindfulness-based stress reduction and cancer: a meta-analysis. *Psychooncology*, 2009; 18(6), 571-579.
 129. Birnie K., Garland S.N., Carlson L.E. Psychological benefits for cancer patients and their partners participating in mindfulness-based stress reduction (MBSR). *Psychooncology*, 2010; 19(9), 1004-1009.
 130. Matchim Y., Armer J.M., Stewart B.R. Effects of Mindfulness-Based Stress Reduction (MBSR) on Health Among Breast Cancer Survivors. *West J Nurs Res*. 2010 Oct 18; doi: 10.1177/0193945910385363
 131. Kvillemo P., Bränström R. (2011). Experiences of a mindfulness-based stress-reduction intervention among patients with cancer. *Cancer Nurs*, 2011; 34(1), 24-31.
 132. Fang C.Y., Reibel D.K., Longacre M.L., Rosenzweig S., Campbell D.E., Douglas, S.D. Enhanced psychosocial well-being following participation in a mindfulness-based stress reduction program is associated with increased natural killer cell activity. *J Altern Complement Med*, 2010; 16(5), 531-538.
 133. Sun T.F., Kuo C.C., Chiu, N.M. Mindfulness meditation in the control of severe headache. *Chang Gung Med J*, 2002; 25(8), 538-541.

134. Joo H.M., Lee S.J., Chung Y.G., Shin I.Y. Effects of mindfulness based stress reduction program on depression, anxiety and stress in patients with aneurysmal subarachnoid hemorrhage. *J Korean Neurosurg Soc*, 2010; 47(5), 345-351.
135. Evans S. Review: mindfulness-based therapies effective for anxiety and depression. *Evid Based Ment Health*. 2010 Nov;13(4):116
136. Hofmann S.G., Sawyer A.T., Witt A.A., Oh D. The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. *J Consult Clin Psychol*, 2010; 78(2), 169-183.
137. Evans S., Ferrando S., Carr C., Haglin, D. Mindfulness-based stress reduction (MBSR) and distress in a community-based sample. *Clin Psychol Psychother*, 2010 28 Sept; DOI: 10.1002/cpp.727.
138. EFT Universe. What is EFT. Retrieved January 21, 2011, from http://www.eftuniverse.com/index.php?option=com_content&view=article&id=10&Itemid=13#What
139. Lane J. The Neurochemistry of Counterconditioning: Acupressure Desensitization in Psychotherapy. *Energy Psychology: Theory, Research, & Treatment*, 2009; 1(1), 31-44.
140. Brattberg G. Self-administered EFT (Emotional Freedom Techniques) in Individuals with Fibromyalgia: A Randomized Trial. *Integrative Medicine: A Clinician's Journal*, 2008; 7 (4) 30-35.
141. Salas M, Brooks A. J, Rowe J. E The Immediate Effect of a Brief Energy Psychology Intervention (EFT) on Specific Phobias: A Randomized Controlled Trial. *Explore: The Journal of Science and Healing*, 2010; Forthcoming (6), 5.
142. Church D, Brooks A. J. The Effect of a Brief EFT (Emotional Freedom Techniques) Self-Intervention on Anxiety, Depression, Pain and Cravings in Healthcare Workers. *Integrative Medicine: A Clinician's Journal*, 2010 Oct/Nov, 40-44.
143. Dessaulles A., Johnson S.M., Denton, W. The Treatment of Clinical Depression in the Context of Marital Distress. *American Journal of Family Therapy*, 2003; 31, 345-353.
144. Church D., Hawk C., Books A., Toukolehto O. Psychological Trauma in Veterans using EFT (Emotional Freedom Techniques): A Randomized Controlled Trial. *The Society of Behavioral Medicine*, Seattle, Washington, April 7-10, 2010.
145. Swingle P., Pulos L., Swingle, M. K.. Neurophysiological Indicators of EFT Treatment Of Post-Traumatic Stress. *Journal of Subtle Energies & Energy Medicine*, 2005; 15, 75-86.
146. Macintosh, H, Johnson S. M.. Hanging on to a Heartbeat: Emotionally Focused Therapy as a Resource for Couples Dealing with the Trauma of Coronary Heart Disease. In E. Molinari (Ed.). *Italian Handbook of Clinical Psychology and Heart Disease*. Springer Publications; 2005.pp 391-412.