

# The Potential Role of Trauma Releasing Exercises (TRE) in the Treatment of Trauma, PTSD and its Co morbid Conditions including Anxiety, Depression and Somatoform Disorders

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## ***Introduction***

Approaches involving some kind of exposure and the re-experiencing of trauma have been repeatedly shown to be the most effective treatments for PTSD (Bradley et al., 2005; Sharpless & Barber, 2011; Van der Kolk et al., 2007; Van Etten & Taylor, 1998). However, they are not highly effective. Only about 50% of clients improve (Bradley et al., 2005; Scott & Stradling, 1997; Schubert & Lee, 2009), veterans improve less than other groups (Bradley et al., 2005) with some veterans experiencing serious adverse consequences (Pitman et al., 1991).

There are many reasons. Some people have difficulty vividly imagining their traumas (Sharpless & Barber, 2011), others refuse to re-experience the intense emotions associated with their traumas (Scott & Stradling, 1997; Van der Kolk et al., 2007; Vujanovic et al. 2011), and still others are unwilling to even talk about their traumas (Scott & Stradling, 1997) or are resistant to opening up about themselves in talk therapies in general (Sharpless & Barber, 2011) or drop out of therapy (Vujanovic et al., 2011). In addition to the 50% who do not improve, there are many traumatized individuals who do not seek help (Vujanovic et al. 2011) because they cannot afford the time or money for therapy (Sharpless & Barber, 2011) or are totally unwilling to admit they need psychological help (Nickel et al., 2006).

The situation is even worse when it is recognized that pure PTSD captures a limited aspect of posttraumatic psychopathology (Creamer et al., 2001; Schubert & Lee, 2009; Van der Kolk et al., 2005). In a study of 10, 600 Australians, 88% of individuals with PTSD were found to have at least one other psychiatric diagnosis, 59% had 3 or more disorders and 51% met criteria for axis II diagnosis, and traumatized people presented with various combinations of depressions, anxiety, somatization in addition to PTSD (Creamer et al., 2001; Van der Kolk et al., 2005). Most PTSD research excludes PTSD with comorbid conditions and hence excludes the early onset PTSD or disorders of extreme stress not otherwise specified (DESNOS). People with these complex PTSD diagnoses usually suffer from disturbances in perception, information processing, affect regulation, impulse control, and personality disorders which don't respond to PTSD treatments of choice (Schubert & Lee, 2009; Van der Kolk et al., 2005). In addition, there is still no clear theoretical understanding of the processes involved in PTSD (Schubert & Lee, 2009) or even exactly what criteria should define PTSD (Rosen, Spitzer & McHugh, 2008; Schubert & Lee, 2009; Van der Kolk et al., 2005).

Recent neuroscience research appears to explain why best practice verbal psychotherapies for PTSD and trauma are not particularly effective, and there are now calls for clinical practice to be informed by psychophysiology research (Scott & Stradling, 2001). Neuroscience research has shown that there are significant limitations to the conscious control that humans have over their actions and emotions (Scott & Stradling, 2001; Van der Kolk, 1994, 2006). It has been firmly established that instinctual unconscious physiological processes of the central nervous system are dominant in traumatized individuals and their neocortex processes are overridden and diminished (Porges, 1995; 2001; van der Kolk, 2006). Trauma occurs when the immobilization system that blocks the neocortex processes and social engagement system during potentially traumatic events is unable to return to normal afterwards (Porges, 1995, 2001; Scaer, 2001; Van der kolk, 2006). That has led to an interest in mindfulness and bottom-up body oriented psychotherapies (BOPs) being included in PTSD treatment (Levine, 2010; Ogden & Minton, 2000; Rothschild, 2000; Sharpless & Barber, 2011; Van der Kolk, 2006; Vujanovic et al., 2011)

The importance of BOP has long been recognized in approaches such as Focusing (Gendlin, 1961), Gestalt therapy (Perls, 1969), Bioenergetic Analysis (Lowen & Lowen, 1977) and many others. However, it is only recently that sufficient interest, and hence, effectiveness studies involving more than anecdotal evidence have begun to emerge (Rohrlich, 2009). In his recent review of BOP research and evidence-based practice, Rohrlich found that BOP is helpful with conditions such as somatoform disorders, PTSD and chronic schizophrenia which do not respond well to neo-cortex-based psychotherapies. He even found that, following a robust meta-analysis, BOP and other non-verbal therapies had been recommended as the treatment of choice for schizophrenia by the U.K. NICE guideline. There has also been investigation of the use of mindfulness and/or BOP with conventional verbal therapies (Sharpless & Barber, 2011; Vujanovic et al., 2011) e.g. DBT has been found to be effective with PTSD (Steil et al., 2011) and CBT exposure combined with interoceptive exposure has yielded positive results (Wald & Taylor, 2007; 2010). Also, PTSD has been successfully treated using ACT (Orsillo & Batten, 2005), which is expected to be effective because of its success with anxiety and depression (Forman et al., 2007) which are usually comorbid with PTSD (Creamer et al., 2001; Van der Kolk et al., 1985).

While these new directions are promising, recurring trauma has been implicated in most serious mental illness (Creamer et al., 2001; Van der Kolk et al., 1985), mass trauma due to wars and natural disasters are on the increase (Berceli, 2010a), many people can't afford the money or time or do not have the inclination to engage in what can amount to 30 to 60 hours of exposure homework per week (Sharpless & Barber, 2011 or Stradling & Taylor, 1997?), nor are there sufficient therapists to meet the increasing demand (Berceli, 2010a). Psychotherapy for trauma and PTSD is at a crisis point and a paradigm shift is needed to provide brief effective treatment to reverse mass trauma quickly in the majority of people affected (Berceli, 2010a).

The fact that it is common for humans to be traumatized and develop PTSD, yet wild animals exposed to regular predator attack rarely do, is believed to be the key to providing early, fast and effective recovery from mass trauma (Berceli, 2010a; Levine, 2010).

### ***Neurogenic Tremors***

Studies of animals under threat have provided information about behavior and the physiological processes in situations of both escapable shock and inescapable shock (Marx et al., 2008). Most attention has been given to inescapable shock since it has been seen as a good model for the development of PTSD in humans. When animals are prevented from escaping (chronic threat), they suffer symptoms of inescapable shock parallel to symptoms of humans with complex PTSD (Marx, Forsyth & Lexington, 2008; van der Kolk, Greenberg, Boyd & Krystal, 1985). This has led to an interest in learning how to reverse inescapable shock in animals so that findings can be applied to treatment of PTSD (Van der Kolk et al., 1985).

However, there is a more direct approach. Since animals in the wild are rarely traumatized (Levine, 2010), and experimental animals subjected to intermittent threat develop resilience (Lyons et al., 2010), it would be useful to know what usually happens behaviourally and physiologically in animals that rarely happens in humans that might prevent trauma symptoms from developing in humans (Scaer, 2001)

The behavior of experimental animals during the immobility response to escapable threat has been well researched (Braud & Ginsburg, 1973a) and repeatedly found to include the following sequence: brief struggling (fight/flight), immobility (freeze), trembling limbs, and finally loud noises, followed by normal behavior (Braud & Ginsburg, 1973b). Observations of wild animals have shown a similar sequence (Levine, 1997; 2010) with the expected difference that the fight/flight behavior was usually running to try to escape the predator rather than brief struggling to get out of the hand of the experimenter. It has also been observed by African gamekeepers that if captured animals do not shake and freeze when released back into the wild, they do not survive (Levine, 1997; 2010). This led Levine to expect that the important animal behaviour that is often missing in humans is the trembling of limbs. Being aware that the freeze response is associated with high levels of both parasympathetic and sympathetic arousal (Porges, 1995; 2001), he proposed that shaking and other instinctual movements use up the excess bio-chemicals built up in the organism after a flight-flight-freeze response allowing the physiological processes of the body to return to a

normal non-alert state (Berceli & Napoli, 2006; Levine, 2010). This is consistent with the fact that body shaking in experimental animals after cessation of threat is associated with a reduction in opiates (Van der Kolk et al., 1985).

While humans can and often do shake or tremor involuntarily after life-threatening events, it is considered to be a symptom of fear (US Dept Defence, 2006) and a sign of weakness (Berceli, 2009). In addition, if shaking and trembling happen in a non-threatening context, it is seen as pathological e.g. epileptic seizures, Parkinson's tremors, and anxiety disorders including PTSD and non-epileptic seizures (Howlett & Ruber (2009). It would appear that socialization has suppressed it (Schore, 2002). This is consistent with Berceli's (2008) observation in bomb shelters in Africa of parents stopping themselves from trembling because they didn't want their children to think they were afraid. For all these reasons, the potential therapeutic value of the tremoring that occurs after the fight-flight-freeze response in animals and humans has rarely been investigated (Scaer, 2001).

Nevertheless there is quite a bit of evidence from diverse sources which supports Levine's novel theory. In a recent study of wild geese fitted with electronic monitoring of physiological processes, Kralj-fiser et al.(2010) report an increase in body shaking and wing flapping associated with faster recovery from fight-flight stress under conditions where threat was held constant. This, together with the fact that opiates reduce after body shaking (van der Kolk et al., 1985), suggests that shaking has more to do with recovery than fear. Likewise, chicks that were rethreatened before they have finished shaking and flapping about after a prior threat has been shown to reduce their survival capacity (Seyle, 1956; Scaer, 2001), while chicks that had experienced intermittent threat (been caught, briefly held and let go to complete their immobility response) developed better resilience than those chicks who had not been threatened (Ginsburg, Braud & Taylor, 1974).

In humans, Chi Gong teachers in China have claimed for thousands of years that spontaneous body movement practises including shaking releases psychological symptoms (Jahnke, 1997). In the West, deliberate activation of naturally occurring body tremoring has been extensively used to facilitate spontaneous breathing and release of chronic muscle tension in the development of the performer's voice (Meier, 2010). In addition, many Body Oriented Psychotherapies (BOP) recognize shaking or trembling as therapeutic e.g. Bioenergetic Analysis (Lowen & Lowen, 1977) , Holotropic Breathwork (Grof, 1988), sensorimotor psychotherapy (Ogden & Minton, 2000), Somatic Experiencing (Levine, 1997) , body-oriented hypnotherapy (Edwards, 2002).

Some of these have been reported to be therapeutically effective e.g. somatic experiencing with hurricane survivors (Leitch, 2007) and tsunami survivors (Parker & Doctor, 2008), Holotropic Breathwork with mostly middle-aged white females (Holmes et al., 1996), and Bioenergetic Exercises with Turkish Immigrants (Nickel et al., 2006), schizophrenia (Rohricht & Priebe, 2006), female sexuality (Ladas & Ladas, 2005), and clients in general (Koemeda-Lutz et al., 2006; Ventling, 2002).

In addition, EMDR, which is considered to be a treatment of choice for PTSD (Schubert & Lee, 2009), can be regarded as providing support for the therapeutic value of tremors. The eye movements which it activates and which are known to have a dearousal effect (Sack et al., 2008; Schubert & Lee, 2009) may be having a dearousal effect on the whole body in the way Levine suggests, or in a more restricted way connected with the fact that eye movements are involved in the initial orienting response to threat .

Finally, there is substantial evidence of the medical benefits of mechanically induced tremoring called whole body vibration (WBV) for a variety of conditions (Jordan et al., 2005). Of particular relevance to psychologists, WBV has been shown to reduce pain (Rittweger et al., 2002) and stress-producing hormones (Bosco et al., 2000), which means it might have a beneficial effect on depression and PTSD as well as anxiety.

In summary, there is substantial evidence from diverse sources that naturally occurring and mechanically induced tremoring is likely to be therapeutic.

In order to address the problems with existing treatments for PTSD, and in accord with Van der Kolk 's (2006) call for mindful somatic approaches combined with physical action, and Porges (2001) call for interventions that exercise

physiological processes in a context of safety, Berceli developed a set of trauma releasing exercises (TRE) to reactivate neurogenic tremors in traumatized individuals and applied it to large groups of these people over a period of 15 years in 19 war-torn countries in Africa and the Middle East (Berceli & Napoli, 2006). The anecdotal evidence he accumulated over those years showed that the exercises were safe and many people lost hyperarousal symptoms commonly experienced in PTSD such as difficulty sleeping, exaggerated startle response, irritability, disturbing memories and detachment. These people were from diverse cultural and religious backgrounds and feedback was equally positive from both civilians and the military.

After returning to the West, Berceli undertook some preliminary pilot studies. He found self-report evidence that TRE improves sleep and reduces stress in American teen school students (Berceli, 2010b), significant reduction in three measures of stress in social work students doing agency internships (Berceli & Napoli, 2006), and in a randomized controlled study, he found TRE to reduce anxiety in college students compared with a "stress release exercise" control group (Berceli, 2009). There is a U.S. Army study underway and a report on whether TRE reduces stress in combat troops is pending. Also, anecdotal evidence continues to build in the West. Psychiatrist and neurologist Robert Scaer (2008) says he has taught TRE to patients with consistently remarkable results.

It is claimed that TRE activates neurogenic tremors by stretching and gently fatiguing particular groups of muscles that are involved in a traumatic event, especially the psoas muscles deep in the pelvis (Berceli & Napoli, 2006). These exercises involve simple, safe and easy actions such as raising and lowering the heel while standing on one foot, standing on one leg with foot flat on the floor while bending and straightening the weight-bearing knee, sitting against the wall, and lying on the floor with knees bent, which is the usual final tremoring position. These exercises are modified to a lesser or greater degree depending on the physical health, fitness, age and flexibility of the individual. If even the slightest bit of pain is experienced, the person is instructed to cease the exercise immediately. Pain is seen as counterproductive to a procedure that relies on relaxation for its success. Also, the full set of exercises is taught initially (depending on the person) to ensure that the tremoring response is activated. However, as the body becomes reconditioned to the natural tremoring response, it is often sufficient to sit or lie in a fixed position with slight thigh tension to activate tremoring, especially after physical or emotional stress. Most people are instructed to practise tremoring for 15 minutes two or three times per week for at least three months and to do most of the activating exercises at least once per week.

### ***The Role of the Psychologist***

Those with deep trauma such as PTSD with DESSOS and other psychiatric disorders might need to restrict themselves to two minutes of tremoring per session so as not to release intense emotional or physical experiences. It is because each person is different and each individual needs to learn to self-regulate the tremoring that will release their incomplete past trauma reactions, that those deeply traumatized individuals with PTSD and comorbid psychiatric diagnoses need to learn and practise tremoring under the supervision of a psychologist or other mental health professional who is also experienced in the use of TRE (Berceli & Napoli, 2006). The coaching psychology model should be helpful for improving compliance, for without regular practice over a three month period, little may be gained by chronically traumatized individuals.

TRE may well solve a number of problems presented by current PTSD treatments. First, because TRE is a set of exercises which can be learned in a group setting as stress reduction exercises, people who would never consult a counsellor or psychotherapist may be able to receive help (Berceli & Napoli, 2006 ; Howett & Reuber, 2009; Nickel et al., 2006; Vujanovic et al. 2011) by being persuaded to sign up for a weekly class.

Second, if as claimed, TRE activates the natural self-healing neurophysiological processes of the body and bypass the client's ego defences (Berceli, 2005), it has an enormous advantage in increasing willingness to recover from trauma.

Third, while it is known that early intervention reduces suffering, traditional crisis intervention focuses on cognitive skills during and immediately after stress, a time when the functioning of the neocortex is significantly reduced (Porges, 1995; 2001; Van der Kolk, 2006). However, because TRE is a physical process of activating an instinctual

neurological process that does not involve the neocortex, it is possible that with minimal guidance most healthy functioning adults traumatized by natural disasters, crime or war will be able to use TRE as a self-help recovery tool (Berceli, 2010a), thus significantly reducing the cost and time (Sharpless & Barber, 2011) of dealing with mass trauma (Berceli, 2010a).

Fourth, for similar reasons, TRE may be useful as a preventative measure for social workers and psychologists who are liable to suffer vicarious traumatization when constantly working with traumatized people (Berceli & Napoli, 2006; McCann & Perlman, 1990).

Fifth, the benefits of TRE appear not to be restricted to PTSD. Existing evidence with whole body vibration and neurogenic tremors suggests that those suffering from anxiety and pain may benefit, and because trauma is a precursor to depression (Van der Kolk, 1987) and the dysregulation of neurophysiological processes in PTSD and depression are similar (Sharpley, 2010), it is likely that depressed individuals will also benefit.

Sixth, just as the drop out in EMDR is less than CBT exposure (Schubert & Lee, 2009), it is expected that dropout in TRE would be less because it aims to avoid exposure by directly releasing the bio-chemicals and deep muscle tension directly rather than forcing the individual to re-experience the intense thoughts and emotions that occur in top-down processes.

Seventh, most exposure based therapies include between 30 and 60 hours of exposure homework per week (Schubert & Lee, 2009) while TRE only involves 1 hour (usually three 20 minute sessions) to achieve its results (Berceli & Napoli, 2006). This improves the chances of compliance with homework.

Eighth, while conventional psychotherapies are unsuitable for complex cases of PTSD involving multiple physical symptoms (Howlett & Reuber, 2009; Van der Kolk et al., 2005), it is considered to be almost as simple and easy to teach TRE to these people as to anyone else. The health professional simply needs to take the process more slowly so the client will not have to experience intense physical or emotional symptoms (Berceli, 2008).

Finally, because TRE involves less suffering than exposure-based treatments of choice, there is an ethical imperative for psychology researchers to investigate the potential of TRE to reduce the suffering involved in treatment. Also, the recent spate of bushfires, floods, cyclones, earth-quakes and revolts is a stark reminder that mass trauma is indeed on the increase, and TRE's potential to treat large groups of traumatized people quickly, provides an additional economic as well as ethical imperative. In the meantime, practitioners trained in TRE need to monitor the effectiveness of TRE with each individual client and adjust the use of this new intervention accordingly.

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## References

Berceli, D. (2005). *Trauma releasing exercises*. South Carolina: Global Book Publishers

Berceli, D. & Napoli, M. (2006). A proposal for a mindfulness-based trauma prevention program for social work professionals. *Complimentary Health Practice Review*, 11(3), Jan, 153-165

Berceli, D. (2008). *The revolutionary trauma release process*. Vancouver, Canada: Namaste Publishing

Berceli, D. (2009). Evaluating the effects of stress reduction exercises employing mild tremors: a pilot study. Unpublished paper based on Berceli, D. (2008). *Evaluating the effects of stress reduction exercises*. Doctoral Dissertation. Arizona State University *Dissertation Abstracts International Section A: Humanitarian and Social Sciences Vol 68 (11-A)* AAT 3287912 US: Proquest Information & Learning

Berceli, D. (2010a). Neurogenes Zittern: eine körperorientierte Behandlungsmethode für Traumata in grossen Bevölkerungsgruppen. (Neurogenic tremors - The use of body-based interventions for mass trauma recovery.) *Trauma & Gewalt*, 4 (2), May, 148-157

- Berceli, D. (2010b). *Teens de-stress, sleep better with TRE*. Retrieved March 14, 2011  
<http://www.traumaprevention.com/2010/06/14teenager-de-stress-sleep-better-with-TRE>
- Bosco, C.; Iacovelli, M.; Tsarpela, O.; Cardinale, M.; Bonifali, M. Tihanyi, J.; Viru, M; De Lorenzo, A et al. (2000). Hormonal responses to whole-body vibration in men. *European Journal of Applied Physiology*, 81 (6), 449-54
- Bradley, R. Greene, J., Russ, E., Dutra, L. & Westen, D. (2005). A multidimensional meta-analysis of psychotherapy for PTSD. *American J. Psychiatry*, 16 (2)2, 214-227
- Braud, W.G. & Ginsburg, H.J. (1973a). Effect of administration of adrenalin on immobility reaction in domestic fowl. *J. Comparative and Physiological Psychology*, 83 (1), 124-127
- Braud, W.G. & Ginsburg, H.J. (1973b). Immobility reactions in domestic fowl (*Gallus Gallus*) less than 7 days old: resolution of a paradox. *Animal Behavior*, 21, 104-108
- Creamer, M., Burgess, P.M. & McFarlane, A.C. (2001). Posttraumatic stress disorder: Findings from the Australian National Survey of Mental Illness and Well-being, *Psychological Bulletin*, 31 (7), 1237-1247
- Edwards, L.A. (2002). Body-oriented hypnotherapy: Releasing preverbal trauma. *Australian J. Clinical Hypnotherapy & Hypnosis*, 23 (1), 31-44
- Forman, E.M., Herbert, J.D., Moitra, E., Yeomans, P.D. & Geller, P.A. (2007). A randomized controlled effectiveness trial of Acceptance and Commitment Therapy and Cognitive Therapy for anxiety and depression. *Behavior Modification*, 31, 772-799
- Gendlin, E. (1961). Experiencing. A variable in the process of therapeutic change. *American J. Psychotherapy*, 15, 232-245
- Ginsburg, H.J., Braud, W. & Taylor, R.D. (1974). Inhibition of distress vocalizations in the open field as a function of heightened fear or arousal in domestic fowl. *Animal Behavior*, 22, 745-749
- Grof, S. (1988). *The adventure of self-discovery: dimensions of consciousness and new perspectives in psychotherapy and inner exploration*. Albany: State University of New York Press pp 194-196
- Holmes, S.W.; Morris, R.; Clance, P.R.; Putney, R.T. (1996). Holotropic Breathwork: An experiential approach to psychotherapy. *Psychotherapy: Theory, Research, Practice, Training*, 33(1, Spring), 114-120
- Howlett, S. & Reuber, M. (2009). An augmented model of brief psychodynamic interpersonal therapy for patients with nonepileptic seizures. *Psychotherapy: Theory, Research, Practice, Training*, 46 (1), 125-138
- Jahnke, R. (1997). *The healer within: Using traditional Chinese techniques to release your body's own medicine*. New York: HarperCollins
- Jordan, M.J., Norris, S.R., Smith, D.J. & Herzog, W. (2005). Vibration training. An overview of the area, training consequences, and further directions. *J. Strength Cond. Research*, 19, 459-466
- Kelley, D.M. & Benbadis, S. (2007). Eye movement desensitization and reprocessing in the psychological treatment of trauma-based psychogenic non-epileptic seizures. *Clinical Psychology and Psychotherapy*, 14, 135-144
- Koemeda-Lutz, M., Kaschke, M., Reverstorf, D., Scherrmann, T., Weiss, H. & Soeder, U. (2006). Evaluation of the effectiveness of body-psychotherapy in outpatient settings. *Psychotherapie, Pschosomatik, Medicinische Psychologie*, 56 (12), 480-7

- Kralj-Fiser, S., Scheiber, I.B.R., Kotrschal, K., Weiss, B.M. & Wascher, C.A.F. (2010). Glucocorticoids enhance and suppress heart rate and behaviour in time dependent manner in greylag geese. *Physiology & Behavior*, 100 (4), 394-400
- Ladas, A.K. & Ladas, H.S. (2005). Women and Bioenergetic Analysis. *USA Assoc for Body Psychotherapy Journal*, 4 (2), 68-97
- Leitch, M.L., Vanslyke, J. & Allen, M. (2007). Somatic experiencing treatment with social service workers flowing hurricanes Katrina & Rita. *Social Work*, 54 (1), .....
- Levine, P. (1997). *Waking the tiger: Healing trauma: The innate capacity to transform overwhelming experience*. Berkeley, CA: North Atlantic Books
- Levine, P. (2010). *In an unspoken voice: How the body releases trauma and restores goodness*. Berkeley, CA: North Atlantic Books
- Lowen, A. & Lowen, L. (1977). *The way to vibrant health: A manual of bioenergetic exercises*. New York: Harper & Row
- Lyons, D.M., Parker, K.J. & Schatzberg, A.F. (2010). Animal models of early life stress: Implications for understanding resilience. *Developmental Psychobiology*, 52 (7), 616-624
- Marx, B.P., Forsyth, J.P., and Lexington, J.M. (2008). Tonal immobility as an evolved predator defense: Implications for sexual assault survivors. *Clinical Psychology: Science and Practice*, 15 (1), 74-90
- McCann, I. & Pearlman, L. (1990). Vicarious traumatization: A framework for understanding the psychosocial effects of working with victims. *J. Traumatic Stress*, 3, 131-149
- Nickel, M., Cangoez, B., Bachler, E., Muehlbacher, M., Lojewski, N. et al. (2006), Bioenergetic exercises in inpatient treatment of Turkish immigrants with chronic somatoform disorders: A randomized, controlled study. *J. Psychosomatic Research*, 61, 507-513
- Ogden, P. & Minton, K. (2000). Sensorimotor psychotherapy. *Traumatology*, 6(3), 149-173
- Orsillo, S.M. & Batten, S.V. (2005). Acceptance and Commitment Therapy in the treatment of posttraumatic stress disorder. *Behavior Modification*, 29 (1), 95-129
- Parker, C. & Doctor, R.M. (2008). Somatic therapy treatment effects with tsunami survivors. *Traumatology*, 14 (3), 103-109
- Perls, F. (1969). *Gestalt Therapy Verbatim*. Lafayette, CA: Real People Press
- Pitman, R.K., Altman, B., Greenwalk, E., Longpre, R.E., Macklin, M.I., Poire, R.E. & Steketee, G.S. (1991). Psychiatric complications during flooding therapy for posttraumatic stress disorder. *J. Clinical Psychiatry*, 52, 17-20
- Porges, S. (1995). Orienting in a defensive world: Mamalian modifications of our evolutionary heritage: A polyvagal theory. *Psychophysiology*, 32, 301-318
- Rittweger, J.; Just, K.; Kautzsch, K.; Reeg, P. & Felsenberg, D. (2002). Treatment of chronic lower back pain with lumbar extension and whole body vibration exercise: A randomized controlled trial. *Spine*, 27(17, Sep 1), 1829-34
- Rohricht, F. (2009). Body oriented psychotherapy. The state of the art in empirical research and evidence-based practice: A clinical perspective. *Body, movement and dance in psychotherapy*, 4 (2), 135-156

- Rohricht, F. & Priebe, S. (2006). Effect of body-oriented psychological therapy on negative symptoms in schizophrenia: A randomized controlled trial. *Psychological Medicine: A Journal of Research in Psychiatry and the Allied Sciences*, 36 (5), 669-678
- Rosen, G.M., Spitzer, R.L. & McHugh, P.R. (2008). Problems with the posttraumatic stress disorder diagnosis and its future in DSM-V. *British J. Psychiatry*, 192, 3-4
- Rothschild, B. (2000). *The body remembers: the psychophysiology of trauma and trauma treatment*. New York and London: Norton
- Sack, M., Lempa, W., Steinmett, A, Lamprecht, F. & Hofmann, A. (2008). Alterations in autonomic tone during trauma exposure using eye movement desensitization and reprocessing (EMDR) - Results of a preliminary investigation. *Journal of Anxiety Disorders*, 22 (7), 1264-71
- Scaer, R. (2001). The neurophysiology of dissociation and chronic disease. *Applied Psychophysiology and Biofeedback*, 26(1), 73-91
- Scaer, R. (2008). Foreword. In D. Bercei. *The revolutionary trauma release process*. Vancouver, Canada: Namaste Publishing
- Schore, A.N. (2002). Dysregulation of the right brain: a fundamental mechanism of traumatic attachment and the psychopathogenesis of posttraumatic stress disorder. *Australian and New Zealand Journal of Psychiatry*, 36 (1), 9-30
- Selye, H. (1956). *The stress of life*. New York: McGraw-Hill
- Schubert, S. & Lee, C.W. (2009). Adult PTSD and its treatment with EMDR: A review of controversies, evidence, and theoretical knowledge. *J. EMDR Practice & Research*, 3 (3), 117-132
- Scott, M.J. & Stradling, S.G. (1997). Client compliance with exposure treatments for posttraumatic stress disorder. *J. Traumatic Stress*, 10 (3), July, 523-526
- Scott, M.J. & Stradling, S.G. (2001). Translating the psychobiology of post-traumatic stress disorder into clinically useful analogy. *British Journal of Medical Psychology*, 74, 249-254
- Sharpless, B.A. & Barber, J.P. (2011). A clinician's guide to PTSD treatments for returning veterans. *Professional Psychology: Research and Practice*, 42 (1), 8-15
- Sharpley, C.F. (2010). A review of the neurobiological effects of psychotherapy for depression. *Psychology: Theory, Research, Practice, Training*, 47(4), 603-615
- Steil, R., Dyer, A., Priebe, K., Kleindienst, N. & Bohus, M. (2011). Dialectical behavior therapy for posttraumatic stress disorder related to childhood sexual abuse: A pilot study of an intensive residential treatment program. *J. Traumatic Stress*, 24 (1), 102-106
- Van der Kolk, B. (1987). The drug treatment of post-traumatic stress disorder. *Journal of Affective Disorders*, 13(2), Sep-Oct, 203-213
- Van der kolk, B. (1994). The body keeps the score: Memory and the evolving psychobiology of post traumatic stress. *Harvard Review of Psychiatry*, 1 (5), 253-265
- Van der Kolk, B.A. (2006). Clinical Implications of neuroscience research in PTSD. *Annals New York Academy of Sciences*, xxxx, 1-17
- Van der Kolk, B.A., Roth, S., Pelcovitz, D., Sunday, S. & Spinazzola, J. (2005). Disorders of extreme stress: the empirical foundation of a complex adaptation to trauma. *J. Traumatic Stress*, 18 (5), 389-399



Van der Kolk, B.A., Spinazzola, J., Blaustein, M.E., Hopper, J.W., Hopper, E.K. et al. (2007). A randomized clinical trial of eye movement desensitization and reprocessing (EMDR), Fluoxetine, and pill placebo in the treatment of posttraumatic stress disorder: treatment effects and long-term maintenance. *J. Clin. Psychiatry, 68, 1-10*

Van Etten, M.L. & Taylor, S. (1998). Comparative efficacy of treatments for posttraumatic stress disorder: a meta analysis. *Clin. Psychol. Psychother., 5, 126-144*

Ventling, C. D. (2002). Efficacy of Bioenergetic Therapies and stability of the therapeutic result: A retrospective investigation) *USA Body Psychotherapy Journal, 1, 5-28*

Vujanovic, A.A., Niles, B., Pietrefesa, A., Schmertz, S.K. & Potter, C.M. (2011). Mindfulness in the treatment of posttraumatic stress disorder among military veterans. *Professional Psychology: Research and Practice, 42 (1), 24-31*

Wald, J. & Taylor, S. (2007). Efficacy of interoceptive exposure therapy combined with trauma-related exposure therapy for posttraumatic stress disorder: a pilot study. *Journal of Anxiety Disorders, 21 (8), 1050-1060*

Wald, J. & Taylor, S. (2010). Implementation and outcome of combining interoceptive exposure with trauma-related exposure therapy in a patient with combat-related posttraumatic stress disorder. *Clinical Case Studies, 9 (4), 243-259*

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