



## Successful Psychotherapy of PTSD and Brain Changes

This monthly newsletter was created primarily for our colleagues trained in Eye Movement Desensitization and Reprocessing (EMDR) who work with military, veterans, and their families. The purpose of EMDR and the Military-in-Action Newsletters is to promote continued dialogue regarding the efficacy and current developments with EMDR and its use with these special populations.

**ATTENTION RESEARCHERS** If you are interested in doing research that addresses EMDR topics related to the military and you need additional funding, consider applying for the \$25,000 EMDR Research Grant Award.

\$25,000 EMDR Research Grant Award Details:

<https://emdrresearchfoundation.org/research-grants/25000-emdr-research-grant-award/#>

If you need access to expertise for a research project, don't hesitate to apply for the \$1,000 Research Consultation Award.

Research Consultation Award Details:

<https://emdrresearchfoundation.org/research-grants/research-consultation-awards>



## EMDR Study

Malejko, K., Abler, B., Plener, P. L., & Straub, J. (2017).

[Neural correlates of psychotherapeutic treatment of posttraumatic stress disorder: A systematic literature review.](#)

Frontiers in Psychiatry, 85. doi:10.3389/fpsyt.2017.00085.

## ABSTRACT:

### Objectives

Post-traumatic stress disorder (PTSD) is a common psychiatric disease with changes in neural circuitries. Neurobiological models conceptualize the symptoms of PTSD as correlates of a dysfunctional stress reaction to traumatic events. Functional imaging studies showed an increased amygdala and a decreased prefrontal cortex response in PTSD patients. As psychotherapeutic approaches represent the gold standard for PTSD treatment, it is important to examine its underlying neurobiological correlates.

### Methods

Studies published until August 2016 were selected through systematic literature research in the databases PubMed, PsychInfo, and Cochrane Library's Central Register of Controlled Trials or were identified manually by searching reference lists of selected articles. Search terms were "neural correlates" OR "fMRI" OR "SPECT," AND "therapy" AND "PTSD." A total of 19 articles were included in the present review whereof 15 studies compared pre-to-post-therapy signal changes, six studies related pre-treatment activity to pre-to-post-symptom improvement, and four studies compared neural correlates of responders versus nonresponders. The disposed therapy forms were cognitive behavioral therapy (CBT), eye movement desensitization and reprocessing, cognitive therapy, exposure therapy, mindfulness-based intervention, brief eclectic psychotherapy, and unspecified therapy.

### Results

Successful psychotherapy of PTSD was repeatedly shown to be accompanied by decreased activity in the amygdala and the insula as well as increased activity in the dorsal anterior cingulate cortex (dACC) and hippocampus. Elevated dACC activity prior to treatment was related to subsequent treatment success and a positive predictor for treatment response. Elevated amygdala and insula pre-treatment activities were related to treatment failure.

### Discussion

Decreased activity in limbic brain regions and increased activity in frontal brain areas in PTSD patients after successful psychotherapeutic treatment might reflect regained top-down control over previously impaired bottom-up processes.

## The Effect of BLS in EMDR on Fear Extinction and Retrieval

### EMDR Study

Boukezzi, S., Silva, C., Nazarian, B., Rousseau, P. F., Guedj, E., Valenzuela-Moguillansky, C., & Khalfa, S. (2017).

[Bilateral alternating auditory stimulations facilitate fear extinction and retrieval.](#)

Frontiers in Psychology, 8, 990. doi:10.3389/fpsyg.2017.00990.



## ABSTRACT:

Disruption of fear conditioning, its extinction and its retrieval are at the core of posttraumatic stress disorder (PTSD). Such deficits, especially fear extinction delay, disappear after alternating bilateral stimulations (BLS) during eye movement desensitization and reprocessing (EMDR) therapy. An animal model of fear recovery, based on auditory cued fear conditioning and extinction learning, recently showed that BLS facilitates fear extinction and fear extinction retrieval. Our goal was to determine if these previous results found in animals can be reproduced in humans. Twenty-two healthy participants took part in a classical fear conditioning, extinction, and extinction recall paradigm. Behavioral responses (fear expectations) as well as psychophysiological measures (skin conductance responses, SCRs) were recorded. The results showed a significant fear expectation decrease during fear extinction with BLS. Additionally, SCR for fear extinction retrieval were significantly lower with BLS. Our results demonstrate the importance of BLS to reduce negative emotions, and provide a successful model to further explore the neural mechanisms underlying the sole BLS effect in the EMDR.

## From the Military Book Shelf

Grossman, D., & Christensen, L. W. (2008). [On combat: The Psychology and Physiology of Deadly Conflict in War and in Peace.](#) United States of America: Warrior Science Publications.

On Combat looks at what happens to the human body under the stresses of deadly battle, the impact on the nervous system, heart, breathing, visual and auditory perception, memory - then discusses new research findings as to what measures warriors can take to prevent such debilitations so they can stay in the fight, survive, and win. A brief, but insightful look at history shows the evolution of combat, the development of the physical and psychological leverage that enables humans to kill other humans, followed by an objective examination of domestic violence in America. The authors reveal the nature of the warrior, brave men and women who train their minds and bodies to go to that place from which others flee. After examining the incredible impact of a few true warriors in battle, On Combat presents new and exciting research as to how to train the mind to become inoculated to stress, fear and even pain.

Grossman, D. (2009). [On killing: the psychological cost of learning to kill in war and society.](#) [United States of America:](#) New York: Little Brown and Company.

The good news is that most soldiers are loath to kill. But armies have developed sophisticated ways of overcoming this instinctive aversion. And contemporary civilian society, particularly the media, replicates the army's conditioning techniques, and, according to Lt. Col. Dave Grossman's thesis, is responsible for our rising rate of murder among the young.

Upon its initial publication, ON KILLING was hailed as a landmark study of the techniques the military uses to overcome the powerful reluctance to kill, of how killing affects soldiers, and of the societal implications of escalating violence. Now, Grossman has updated this classic work to include information on 21st-century military conflicts, recent trends in crime, suicide bombings, school shootings, and more. The result is a work certain to be relevant and important for decades to come.

## In the News

Bausman, C. (2016, August 11). [U.S. military methods for fear inoculation.](#) Retrieved from Mountain Tactical Institute.



Mountain Tactical Institute

## What's New?



### CREATE A FUNDRAISING PAGE!

You have the opportunity to create a fundraising page in which your network can easily donate to the EMDR Research Foundation in honor of a family member, friend, colleague, yourself, or through a special event or occasion like a wedding, graduation, or running in a 5K race!

Spread the word even further about EMDR therapy and create a Facebook Fundraising Page and select EMDR Research Foundation as your nonprofit.

[More Details on Creating a Fundraising Page](#)

### SEE OUR UPDATED TOOLKIT!

**EMDR Early Intervention and Crisis Response: Researcher's Toolkit**  
Version 03.2018 © 2014-2018

Rosalie Thomas, Ph.D., R.N. with  
formatting/design work by Katy Murray,  
MSW, LICSW

[View Our New Researcher's Toolkit](#)



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