

# THE RESEARCH CORNER

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EMDR therapy evolves informed by research. Research supports clinicians' ability to offer EMDR to patients with specific conditions and to educate third party payors to evidence of efficacy as in the first fully randomized controlled trial on the treatment of depressive disorders by Hase, et al. (2018). Research supports entirely new ways of administering EMDR therapy. As Amanda Karen Patricia Roberts wrote in her article (2018, p. 107) on the EMDR Group Traumatic Episode Protocol (G-TEP), "The initial 11 years of EMDR therapy, the first wave, focused on individual EMDR interventions used in private practices and agencies... We believe that the EMDR group therapies herald the second wave for EMDR therapy, in which the access to effective EMDR treatment can be scaled up." And research supports bringing relief and the possibility of better quality of life to those with heart failure as reported by Wen Kao, et al. (2018).

Of the 23 peer reviewed journal articles directly relevant to EMDR trained clinicians that appeared this quarter, four are featured in "The Research Corner". Two studies evaluated group treatment protocols for cancer patients and suggest that these patients can be effectively helped with group administered EMDR therapy. Another examined the effects of EMDR therapy on quality of life, heart rate variability and depression for patients with heart failure. First up is a summary of the latest study of treating depressive disorders from the European Depression EMDR Network (EDEN).

**Hase, M., Plagge, J., Hase, A., Braas, R., Ostacoli, L., Hofmann, A. et al. (2018). Eye Movement Desensitization and Reprocessing Versus Treatment as Usual in the Treatment of Depression: A Randomized-Controlled Trial.**

This article reports on the first fully randomized controlled trial (RCT) to appear in the series of studies from the EDEN project investigating the effects of EMDR therapy on patients

with depressive disorders. This RCT confirms and extends the earlier studies by Hofmann et al. (2014) and Hase et al. (2015) with a more robust research design. This study is important because generally only randomized clinical trials are considered in meta-analyses and in the development treatment guidelines by government agencies and professional associations.

EMDR therapy was administered using standard manualized EMDR procedures developed by Francine Shapiro (2001) and the specialized EDEN study protocol (DeprEnd: Hofmann et al., 2016). In the DeprEnd protocol, the four kinds of primary targets for reprocessing include: episode triggers preceding depressive symptoms (including Criterion A and non-Criterion A experiences), life experiences associated with irrational beliefs including first experiences and proof memories, depressive and suicidal ideation states, and present and future life stressors or triggers.

Patients were randomized to treatment as usual (TAU) or to EMDR + TAU. There were 16 patients in the TAU group and 14 patients in the EMDR + TAU group. Patients in the EMDR + TAU group received between 4 and 12 EMDR sessions in total and received fewer standard individual therapy sessions than those in the TAU group.

Results showed that the patients who received EMDR therapy in addition to TAU achieved significantly lower scores on both the Beck Depression Inventory II and the Symptom Checklist Revised (SCL-90R) Global Symptom Inventory than patients in the TAU group. A marginally significant difference with lower scores was found for patients in the EMDR + TAU group compared to those in the TAU group on the depression subscale of the SCL-90R. Given the relatively small sample size, these results will need to be replicated with larger samples in future studies. Follow up studies are also needed to clarify whether EMDR therapy produces more stable outcomes with few-

er depressive relapses. In the meantime, EMDR trained clinicians should now consider making use of the DeprEnd protocol and informing patients with depressive disorders that an RCT has confirmed earlier positive results indicating that EMDR therapy can be an effective treatment for those with depressive disorders.

**Jarero, I., Givaudan, M., & Osorio, A. (2018). Randomized Controlled Trial on the Provision of the EMDR Integrative Group Treatment Protocol Adapted for Ongoing Traumatic Stress to Female Patients With Cancer-Related Posttraumatic Stress Disorder Symptoms.**

**Roberts, A. K. P. (2018). The Effects of the EMDR Group Traumatic Episode Protocol With Cancer Survivors**

These two papers continue the earlier exploration of research on individual EMDR therapy for cancer patients with group treatment procedures. Research by Capezzani et al. (2013) and Fareta, Borsato, Civilotti, Fernandez, and Pagani (2016) explored individual EMDR treatment in controlled designs in comparison to individual CBT.

The Integrative Group Treatment Protocol for ongoing traumatic stress (IGTP-OTS; Jarero et al., 2015) was the first group EMDR protocol to be applied to cancer patients. The EMDR-IGTP is described in Jarero et al. (2016). An initial pilot study for cancer patients (Jarero, et al., 2015) evaluated the effectiveness of EMDR-IGTP-OTS in reducing cancer-related PTSD symptoms in adult women with various forms of cancer. Based on positive findings from this pilot study, a randomized controlled trial was carried out with 35 patients receiving EMDR-IGTP-OTS treatment and with 30 patients in no-treatment control groups. There was one therapy group with 35 patients who received six treatment sessions during two consecutive days, three times daily. EMDR-IGTP-OTS was provided in the same hospital where patients received cancer care. All patients

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completed pre, post, and follow-up measurements. None of the 35 patients in the EMDR-IGTP-OTS treatment group dropped out of the study.

Results show patients in both the treatment and the no-treatment groups reported decreased severity of symptoms at the post-treatment and follow-up assessments. However, there were significantly greater decreases for the patients in the EMDR-IGTP-OTS treatment group on all symptoms of PTSD, anxiety, and depression than in the no treatment group as measured by the PTSD Checklist for DSM-5 (PCL-5) and the Hospital Anxiety and Depression Scale (HADS). Patients in the treatment group reprocessed their cancer-related memories in only six sessions and without associations to other earlier memories.

EMDR-IGTP-OTS minimizes both cultural and literacy barriers to treatment because it relies on drawings rather than on speaking or writing a narrative about the traumatic experience and does not require prolonged reliving either in session and or in homework. While this group treatment protocol was highly effective for most subjects, the authors' clinical observations is that about 8% of patients will need additional individual treatment to achieve a healthy end state. For this they recommend the EMDR Protocol for Recent Critical Incidents and ongoing traumatic stress (EMDR-PRECI; Jarero et al., 2011)

The EMDR Group Traumatic Episode Protocol (G-TEP) was introduced in 2013 (Shapiro, 2013) and is now supported by an open access fidelity scale (Shapiro & Moench, 2015). The current pre-experimental cases series was designed to explore the safety and efficacy of the G-TEP for cancer survivors and to assess its effects on posttraumatic stress, anxiety, and depressive symptoms. Thirty-five patients with a cancer diagnosis or treatment within the previous year were treated with G-TEP. There was no control or waitlist group. Patients

presented with a variety of types of cancer, at different stages, and with both initial episodes and recurrences. After individual psychoeducation intake sessions, patients received two 90-minute EMDR G-TEP sessions on consecutive days.

Patients were assessed at pre-treatment, post-treatment and at a one-month follow-up with the Short Posttraumatic Stress Disorder Rating Interview (SPRINT), the State-Trait Anxiety Inventory (STAI, adult version), and the Beck Depression Inventory (BDI-II).

At pretest 54% of participants were above the SPRINT clinical cutoff, while at follow-up testing only 26% remained above the SPRINT clinical cutoff. For scores on the BDI, effect sizes were only small-medium at posttreatment and medium at follow-up. These modest effects may have been related to participants reporting only mild depression at pretreatment. State-Anxiety scores were significantly lower at posttest than pretest, but these gains were not maintained at follow-up. Trait-anxiety scores were significantly lower at follow up than at pretest.

It is possible that providing only two group EMDR G-TEP sessions offered a less than optimal amount of treatment. Contrast this amount of treatment with the six group sessions of EMDR-IGTP-OTS provided by Jarero et al. (2015) to 24 women with cancer diagnoses. Therefore, future studies of EMDR G-TEP treatment of cancer patients should consider a larger number of sessions. In addition, it would be worthwhile to conduct a three-arm randomized evaluation on the relative effectiveness of the EMDR G-TEP, EMDR-IGTP-OTS, and CBT trauma-focused group protocols for cancer survivors.

**Wen Kao, C., Cheng, S. M., Jung Wan, F., Shiang Lin, W., & Cune Chang, Y. (2018). Eye Movement Desensitization and Reprocessing Improves Depressive Symptoms, Quality of Life, and Heart Rate Variability in Patients with Heart Failure**

More than 5.8 million people live with heart failure, and over 550,000 new cases are diagnosed each year in the United States (Roger, 2013). Heart failure patients with higher levels of depression are more likely to die compared with those with lower depressive symptoms (Alhurani et al., 2015). Depression is often associated with an imbalance between the sympathetic and parasympathetic branches of the autonomic system and with a reduction of healthy heart rate variability (HRV: Kao, 2014). This study by Wen Kao, et al. examined the effectiveness of four weekly sessions of EMDR therapy, each lasting 60-90 minutes on decreasing depressive symptoms, and on improving quality of life (QoL) and HRV in patients with heart failure.

The Chinese version of the Beck Depression Inventory-II (BDI-II) was used to measure depressive symptoms. The Chinese version of the Minnesota Living with Heart Failure Questionnaire (MLHFQ) to examine health-related QoL. A CheckMyHeart device (DailyCare BioMedical, Chungli, Taiwan) was used to measure HRV.

A total of 57 heart failure patients participated in this study. Twenty-five were in the Investigation Group (IG). Thirty-two were in the Control Group (CG) who received no intervention. Participants were randomized in blocks of four. Data were collected by an evaluator who was blind to the group assignment at four time points for both groups: before random assignment (pre-intervention), at four weeks after the intervention, at one-month follow-up, and at three-month follow-up. Compared to the CG, the mean scores on the BDI-II were significantly lower in the IG at post-intervention. Health-related QoL significantly improved in the IG compared to the CG. HRV findings suggested that EMDR may increase parasympathetic responses and improve the balance between sympathetic and parasympathetic regulation.

This study was limited in that participants

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in the IG received only four sessions of EMDR therapy. Most participants had experienced multiple heart failure experience but were only able to target and resolve one or two of the most disturbing situations. The results compared with a no treatment control group suggest that EMDR treatment produced significant improvements in heart failure patients' depressive symptoms, health-related QoL, and HRV after four weeks of intervention with effects sustained at one-month and three-month follow-up. However future studies could benefit from adding a second active intervention such a CBT and a larger number of sessions to address the multiple disturbing heart failure-related and other adverse experiences that might underlie these patients' medical condition.

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Capezzani, L., Ostacoli, L., Cavallo, M., Carletto, S., Fernandez, I., Solomon, R., . . . Cantelmi, T. (2013). EMDR and CBT for cancer patients: Comparative study of effects on PTSD, anxiety and depression. *Journal of EMDR Practice and Research*, 7(3), 134-143. <http://dx.doi.org/10.1891/1933-3196.7.3.134>

Faretta, E., Borsato, T., Civilotti, C., Fernandez, I., & Pagani, M. (2016). EMDR and CBT: A comparative clinical Study with oncology patients. *Journal of EMDR Practice and Research*, 10(3), 215-227. <http://dx.doi.org/10.1891/1933-3196.10.3.215>

Hase, M., Balmaceda, U. M., Hase, A., Lehnung, M., Tumani, V., Huchzermeier, C., et al. (2015). Eye movement desensitization and reprocessing (EMDR) therapy in the treatment of depression: a matched pairs

study in an inpatient setting. *Brain Behav.* 5:e00342. doi: 10.1002/brb3.342

Hofmann, A., Hase, M., Liebermann, P., Ostacoli, L., Lehnung, M., Ebner, F. et al. (2016). DeprEnd©—EMDR therapy protocol for the treatment of depressive disorders. In M. Luber (Ed.), *Eye Movement Desensitization and Reprocessing (EMDR) Therapy Scripted Protocols and Summary Sheets: Treating Anxiety, Obsessive-Compulsive, and Mood-Related Conditions* (pp. 290-311). Springer Publishing Co New York, NY.

Hofmann, A., Hilgers, A., Lehnung, M., Liebermann, P., Ostacoli, L., Schneider, W., et al. (2014). Eye movement desensitization and reprocessing (EMDR) as an adjunctive treatment in depression: a controlled study. *J. EMDR Pract. Res.* 8, 103-112. doi: 10.1891/1933-3196.8.3.103

Jarero, I., Artigas, L., & Luber, M. (2011). The EMDR protocol for recent critical incidents: Application in a disaster mental health continuum of care context. *Journal of EMDR Practice and Research*, 5(3), 82-94. <http://dx.doi.org/10.1891/1933-3196.5.3.82>

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# RECENT ARTICLES ON EMDR

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This regular column appears in each quarterly issue of the EMDRIA Newsletter and the EMDR Europe Newsletter. It lists citations, abstracts, and preprint/reprint information—when available—on all EMDR therapy related journal articles. The listings include peer reviewed research reports and case studies directly related to EMDR therapy—whether favorable or not—including original studies, review articles and meta-analyses accepted for publication or that have appeared in the previous six months in scholarly journals. Authors and others aware of articles accepted for publication are invited to submit pre-press or reprint information. Listings in this column will exclude: published comments and most letters to the editor, non-peer reviewed articles, non-English articles unless the abstract is in English, dissertations, and conference presentations, as well as books, book chapters, tapes, CDs, and videos. Please send submissions and corrections to: [aleeds@theLeeds.net](mailto:aleeds@theLeeds.net).

Note: a comprehensive database of all EMDR therapy references from journal articles, dissertations, book chapters, and conference presentations is available in The Francine Shapiro Library hosted by the EMDR International Association at: <http://emdria.omeka.net/>

Previous columns from 2005 to the present are available on the EMDRIA web site at: <https://www.emdria.org/page/emdrarticles>

Cope, S. R., Mountford, L., Smith, J. G., & Agrawal, N. (2018). EMDR to Treat Functional Neurological Disorder: A Review. *Journal of EMDR Practice and Research*, 12(3), 118-132.

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## ABSTRACT

Eye movement desensitization and reprocessing (EMDR) therapy is an established treatment for posttraumatic stress disorder (PTSD), but there is increasing evidence for its use beyond PTSD. EMDR can be effective at treating distressing memories not

associated with PTSD, as well as somatic symptoms (like chronic pain), and as such could potentially be used as a treatment for patients with functional neurological disorder (FND). Searches were conducted for published peer-reviewed articles on the use of EMDR for FND. The databases selected and searched were Medline, Embase, Cochrane Library, CINAHL Plus, Web of Science, PsychINFO, PubMed, and Francine Shapiro Library. This review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. Three relevant articles were found. The studies included are one case series and two case studies. Of the five participants included in the studies, four experienced functional non-epileptic

attacks; and one experienced functional movement disorder. Four out of the five patients were successfully treated with EMDR. EMDR is potentially a useful treatment of FND, but further research, including controlled trials, is required. The authors propose that EMDR could be useful in treating patients with FND and comorbid PTSD, as well as patients without comorbid PTSD. We discuss the clinical implications and propose how EMDR could fit into the FND treatment pathway.

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de Voogd, L. D., Kanen, J. W., Neville, D. A., Roelofs, K., Fernández, G., & Hermans, E. J. (2018). Eye-movement intervention en-

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hances extinction via amygdala deactivation. *The Journal of Neuroscience*, 0703-0718.

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## ABSTRACT

Improving extinction learning is essential to optimize psychotherapy for persistent fear-related disorders. In two independent studies (both  $n=24$ ), we found that goal-directed eye movements activate a dorsal fronto-parietal network and transiently deactivate the amygdala ([graphic1]=.17). Connectivity analyses revealed that this down-regulation potentially engages a ventromedial prefrontal pathway known to be involved in cognitive regulation of emotion. Critically, when eye movements followed memory reactivation during extinction learning, it reduced spontaneous fear recovery 24 hours later ([graphic2]=.21). Stronger amygdala deactivation furthermore predicted a stronger reduction in subsequent fear recovery after reinstatement ( $r=.39$ ). In conclusion, we show that extinction learning can be improved with a non-invasive eye-movement intervention that triggers a transient suppression of the amygdala. Our finding that another task which taxes working memory leads to a similar amygdala suppression furthermore indicates that this effect is likely not specific to eye movements, which is in line with a large body of behavioral studies. This study contributes to the understanding of a widely used treatment for traumatic symptoms by providing a parsimonious account for how working memory tasks and goal-directed eye movements can enhance extinction-based psychotherapy, namely through neural circuits (e.g., amygdala deactivation) similar to those that support cognitive control of emotion.

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Gielkens, E., Vink, M., Sobczak, S., Rosowsky, E., & Van Alphen, B. (2018). EMDR in Older Adults With Posttraumatic Stress Disorder. *Journal of EMDR Practice and Research*, 12(3), 132-141.

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## ABSTRACT

Recognition of posttraumatic stress disorder (PTSD) in older adults is often difficult due to its complicated presentation. Once recognized, trauma symptoms can, in accordance with (inter)national guidelines, be successfully treated with eye movement desensitization and reprocessing (EMDR) therapy. However, limited empirical research has been done on the expression and treatment of PTSD in older adults. This article explains trauma and age in the context of psychotherapy. It discusses the interaction between age and pathology and summarizes the cognitive issues related to age, PTSD, and anxiety. It provides practical suggestions for how these can be addressed in treatment. Age-related challenges related to motivation are identified with practical suggestions for addressing them. The case illustrates the necessary additions and subtractions for older adults, with clear explanations and instructions. This article points the way for future research.

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Hase, M., Plagge, J., Hase, A., Braas, R., Ostacoli, L., Hofmann, A. et al. (2018). Eye Movement Desensitization and Reprocessing Versus Treatment as Usual in the Treatment of Depression: A Randomized-Controlled Trial. *Front Psychol*, 9, 1384.

Open access: <https://www.ncbi.nlm.nih.gov/pubmed/30186192>

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## ABSTRACT

Eye movement desensitization and reprocessing (EMDR) is a well-established treatment for post-traumatic stress disorder. Recent research suggested that it may be effective in treating depressive disorders as well. The present study is part of a multicenter randomized-controlled trial, the EDEN study, in which a homogenous group of 30 patients was treated to test whether EMDR plus treatment as usual (TAU) would achieve superior results compared to TAU only in a psychosomatic-psychotherapeutic inpatient treatment setting. Both groups were assessed by the Beck Depression Inventory-II (BDI-II) and the Global Severity Index and depression subscale of the Symptom Checklist 90-Revised. The EMDR + TAU group improved significantly better than the TAU group on the BDI-II and Global Severity Index, while a marginally significant difference favoring the EMDR + TAU group over the TAU group was found on the depression subscale. In the EMDR + TAU group, seven out of 14 patients improved below nine points on the BDI-II, which is considered to be a full remission, while four out of 16 in the TAU group did so. These findings confirm earlier suggestions that EMDR therapy may provide additional benefit in the treatment of depression. The present study strengthens the previous literature on EMDR therapy in the treatment of depression due to the randomized-controlled design of the EDEN study.

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Hurley, E. C. (2018). Effective Treatment of Veterans With PTSD: Comparison Between Intensive Daily and Weekly EMDR Approaches. *Front Psychol*, 9, 1458.

Open access: <https://www.ncbi.nlm.nih.gov/pubmed/30197612>

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## ABSTRACT

The effectiveness of EMDR therapy in treat-

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ing veterans diagnosed with PTSD was evaluated in this study using two treatment formats: intensive daily EMDR treatment provided twice a day during a 10-day period and a second format of one session each week. The study used archived outcome data previously collected and stored at Soldier Center. Both formats provided 18-20 treatment sessions of EMDR therapy to veterans diagnosed with PTSD that included dissociative exhibitions and moral injury issues. Questions addressed included: (1) does EMDR therapy administered twice daily ameliorate veterans' PTSD symptoms; (2) does EMDR therapy administered twice daily provide equivalent outcome results as EMDR therapy administered weekly for 18-20 sessions; and (3) does the treatment outcome persist. The effectiveness of the weekly treatment group was also evaluated. Both groups' results were assessed at pre-treatment, post-treatment and 1-year follow-up. The results indicated that both weekly treatment and intensive daily treatment groups produced statistically significant treatment effects ( $p < 0.001$ ) that were maintained at 1-year follow-up. The 10-day EMDR intensive daily treatment (EMDR therapy twice a day for 10 days) produced a similar outcome as to that of the weekly treatment with a 1-year follow-up. Results support the effectiveness of EMDR therapy when offered in both weekly treatment format as well as the intensive 10-day format on an outpatient basis. While recognizing the limitations of this study the results are significant to warrant additional research.

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Jarero, I., Givaudan, M., & Osorio, A. (2018). Randomized Controlled Trial on the Provision of the EMDR Integrative Group Treatment Protocol Adapted for Ongoing Traumatic Stress to Female Patients With Cancer-Related Posttraumatic Stress Disorder Symptoms. *Journal of EMDR Practice and Research*, 12(3), 94-104.

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## ABSTRACT

This randomized controlled trial extended the investigation previously conducted by Jarero et al. (2015) which found that the eye movement desensitization and reprocessing Integrative Group Treatment Protocol adapted for ongoing traumatic stress (EMDR-IGTP-OTS) was effective in reducing posttraumatic stress disorder (PTSD) symptoms related to the diagnosis and treatment of different types of cancer in adult women. The current study sought to determine if the results could be replicated and if the treatment would also be effective in reducing symptoms of anxiety and depression. Participants in treatment ( $N = 35$ ) and no-treatment control ( $N = 30$ ) groups completed pre, post, and follow-up measurements using the Posttraumatic Stress Disorder Checklist for the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5) (PCL-5) and the Hospital Anxiety and Depression Scale (HADS). Data analysis by repeated measures analysis of variance (ANOVA) showed that the EMDR-IGTP-OTS was effective in significantly reducing symptoms of PTSD, anxiety, and depression, with symptoms maintained at 90-day follow-up and with large effect sizes (e.g.,  $d = 1.80$ ). A comparison of the treatment and no-treatment control groups showed significantly greater decreases for the treatment group on symptoms of PTSD, anxiety, and depression. No significant correlation was found when exploring the relationship between scores on the Adverse Life Experiences scale and scores indicating pretreatment severity of PTSD, anxiety, and depression. This study suggests that EMDR-IGTP-OTS may be an efficient and effective way to address cancer-related posttraumatic, depressive, and anxious symptoms.

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Khan, A. M., Dar, S., Ahmed, R., Bachu, R.,

Adnan, M., & Kotapati, V. P. (2018). Cognitive Behavioral Therapy versus Eye Movement Desensitization and Reprocessing in Patients with Post-traumatic Stress Disorder: Systematic Review and Meta-analysis of Randomized Clinical Trials. *Cureus*.

Open access: <http://dx.doi.org/10.7759/cureus.3250>

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## ABSTRACT

**Background:** Post-traumatic stress disorder (PTSD) is prevalent in children, adolescents and adults. It can occur alone or in comorbidity with other disorders. A broad range of psychotherapies such as cognitive behavioral therapy (CBT) and eye movement desensitization and reprocessing (EMDR) have been developed for the treatment of PTSD.

**Aim:** Through quantitative meta-analysis, we aimed to compare the efficacy of CBT and EMDR: (i) relieving the post-traumatic symptoms, and (ii) alleviating anxiety and depression, in patients with PTSD.

**Methods:** We systematically searched EM-BASE, Medline and Cochrane central register of controlled trials (CENTRAL) for articles published between 1999 and December 2017. Randomized clinical trials (RCTs) that compare CBT and EMDR in PTSD patients were included for quantitative meta-analysis using RevMan Version 5.

**Results:** Fourteen studies out of 714 were finally eligible. Meta-analysis of 11 studies ( $n = 547$ ) showed that EMDR is better than CBT in reducing post-traumatic symptoms [SDM (95% CI) = -0.43 (-0.73 - -0.12),  $p = 0.006$ ]. However, meta-analysis of four studies ( $n = 186$ ) at three-month follow-up revealed no statistically significant difference [SDM (95% CI) = -0.21 (-0.50 - 0.08),  $p = 0.15$ ]. The EMDR was also better than CBT in reducing anxiety [SDM (95% CI) = -0.71 (-1.21 - -0.21),  $p = 0.005$ ]. Unfortunately, there was no difference between CBT and

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EMDR in reducing depression [SDM (95% CI) = -0.21 (-0.44 - 0.02),  $p = 0.08$ ].

**Conclusion:** The results of this meta-analysis suggested that EMDR is better than CBT in reducing post-traumatic symptoms and anxiety. However, there was no difference reported in reducing depression. Large population randomized trials with longer follow-up are recommended to build conclusive evidence.

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Landin-Romero, R., Moreno-Alcazar, A., Pagani, M., & Amann, B. L. (2018). How Does Eye Movement Desensitization and Reprocessing Therapy Work? A Systematic Review on Suggested Mechanisms of Action. *Frontiers in Psychology*, 9.

Open access: <http://dx.doi.org/10.3389/fpsyg.2018.01395>

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## ABSTRACT

**Background:** Eye movement desensitization and reprocessing [EMDR] is an innovative, evidence-based and effective psychotherapy for post-traumatic stress disorder [PTSD]. As with other psychotherapies, the effectiveness of EMDR contrasts with a limited knowledge of its underlying mechanism of action. In its relatively short life as a therapeutic option, EMDR has not been without controversy, in particular regarding the role of the bilateral stimulation as an active component of the therapy. The high prevalence of EMDR in clinical practice and the dramatic increase in EMDR research in recent years, with more than 26 randomized controlled trials published to date, highlight the need for a better understanding of its mechanism of action.

**Methods:** We conducted a thorough systematic search of studies published until January 2018, using PubMed, ScienceDi-

rect, Web of Knowledge and Scopus databases that examined the mechanism of action of EMDR or provided conclusions within the framework of current theoretical models of EMDR functioning.

**Results:** Eighty-seven studies were selected for review and classified into three overarching models; (i) psychological models (ii) psychophysiological models and (iii) neurobiological models. The evidence available from each study was analyzed and discussed. Results demonstrated a reasonable empirical support for the working memory hypothesis and for the physiological changes associated with successful EMDR therapy. Recently, more sophisticated structural and functional neuroimaging studies using high resolution structural and temporal techniques are starting to provide preliminary evidence into the neuronal correlates before, during and after EMDR therapy.

**Discussion:** Despite the increasing number of studies that published in recent years, the research into the mechanisms underlying EMDR therapy is still in its infancy. Studies in well-defined clinical and non-clinical populations, larger sample sizes and tighter methodological control are further needed in order to establish firm conclusions.

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Lobregt-van Buuren, E., Sizoo, B., Mevissen, L., & de Jongh, A. (2018). Eye Movement Desensitization and Reprocessing (EMDR) Therapy as a Feasible and Potential Effective Treatment for Adults with Autism Spectrum Disorder (ASD) and a History of Adverse Events. *J Autism Dev Disord*.

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## ABSTRACT

The study investigated whether EMDR is a feasible therapy for adults with ASD and a history of adverse events, and whether

it is associated with reductions in symptoms of PTSD, psychological distress and autism. Participants received 6 to 8 weeks treatment as usual (TAU), followed by a maximum of 8 sessions EMDR added to TAU, and a follow-up of 6-8 weeks with TAU only. Results showed a significant reduction of symptoms of post-traumatic stress (IES-R:  $d = 1.16$ ), psychological distress (BSI:  $d = 0.93$ ) and autistic features (SRS-A:  $d = 0.39$ ). Positive results were maintained at follow-up. The results suggest EMDR therapy to be a feasible and potentially effective treatment for individuals with ASD who suffer from the consequences of exposure to distressing events.

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Mertens, G., Kryptos, A.-M., van Logtestijn, A., Landkroon, E., Veen, S. C. V., & Engelhard, I. M. (2018). Changing negative autobiographical memories in the lab: A comparison of three eye-movement tasks. *Memory*.

Open access: [doi.org/10.1080/09658211.2018.1507041](https://doi.org/10.1080/09658211.2018.1507041)

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## ABSTRACT

There is strong evidence that executing eye-movement (EM) tasks that load working memory (WM) while thinking of an emotional memory reduces the emotionality and vividness of this memory. According to WM theory, EM tasks that load WM more should be more effective to devalue emotional memories. In this study, we compared three EM tasks: dot tracking, letter identification, and a combination of dot tracking and letter identification. First, participants completed a reaction time (RT) task to assess the WM load of the three EM tasks relative to a control task (viewing a black screen). Then, participants were asked to think of a negative autobiographical memory while

# RECENT ARTICLES ON EMDR (CONT.)

executing one of these EM tasks and asked to recall another negative memory while executing the control task. Before and after each task, participants rated emotionality and vividness of the memory. All EM tasks slowed down RTs relative to the control task, and the letter identification task induced the largest RTs. Reductions of vividness relative to the control task, however, were comparable across the EM tasks, and there were no reliable reductions of emotionality. We discuss these findings in light of the WM theory and alternative theories for the effects of dual-task interventions.

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Okawara, M., & Paulsen, S. L. (2018). Intervening in the Intergenerational Transmission of Trauma by Targeting Maternal Emotional Dysregulation With EMDR Therapy. *Journal of EMDR Practice and Research*, 12(3), 142-157.

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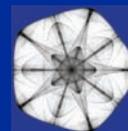
## ABSTRACT

Many studies have shown that the relationship between child and caregivers is critical for healthy development of the child's brain function, and for intergenerational transmission of attachment. Here, we propose a useful eye movement desensitization and reprocessing (EMDR) target for treatment of maternal emotional dysregulation that can cause maltreatment of the child, with the goal of interrupting intergenerational transmission of attachment trauma. First, we use schematics to demonstrate a hypothetical model of the interaction between a child's attachment behavior and a mother's bonding behavior. This schematic shows that the child's physiologic reaction acti-

vates or triggers the mother's negative affect and somatic sensations in her limbic system and brain stem and that, in turn, evokes the mother's maltreatment behavior. The negative affect and somatic sensation (maternal emotional dysregulation) are Dysfunctionally Stored Information (DSI) that was produced in the mother's past experience. We propose that the mother's negative affect and somatic sensations activated by the child's behaviors can be useful targets for EMDR therapy based on this hypothetical model. Two Japanese case reports (mothers with 4-year-old daughters) are described to illustrate this application. Further discussion highlights the feature of Japanese cultural relationship and the dissociation, and the meaning and scope of targeting maternal emotional dysregulation with EMDR therapy.

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# RECENT ARTICLES ON EMDR (CONT.)

Piedfort-Marin, O. (2018). Transference and Countertransference in EMDR Therapy. *Journal of EMDR Practice and Research*, 12(3), 158-172.

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## ABSTRACT

Just like any other psychotherapy method, eye movement desensitization and reprocessing (EMDR) should conceptualize the intersubjective phenomena that are active during EMDR therapy, especially in the treatment of complex cases. This article describes the concepts of transference and countertransference and how to integrate them in the Adaptive Information Processing (AIP) model. In this article, research on mirror neurons, the concept of action systems, and recent considerations on attachment theory for patients with disorganized attachment are incorporated into the concepts of transference and countertransference. Input from each of these theories is illustrated with a clinical vignette that depicts how the client's and the therapist's conscious and unconscious processes are intertwined and how they may affect the efficacy of EMDR therapy. We propose the countertransference-based interweave to release the AIP when countertransference issues block the process. Integrating knowledge on transference and countertransference in EMDR therapy could increase the efficacy of EMDR, especially in complex cases.

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Rikkert, M., van Rood, Y., de Roos, C., Ratter, J., & van den Hout, M. (2018). A trauma-focused approach for patients with tinnitus: the effectiveness of eye movement desensitization and reprocessing - a multicentre pilot trial. *Eur J Psychotraumatol*, 9(1), 1512248.

Open access: <https://www.ncbi.nlm.nih.gov/pubmed/30220982>

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## ABSTRACT

**Background:** While normal tinnitus is a short-term sensation of limited duration, in 10-15% of the general population it develops into a chronic condition. For 3-6% it seriously interferes with many aspects of life.

**Objective:** The aim of this trial was to assess effectiveness of a trauma-focused approach, eye movement desensitization and reprocessing (EMDR), in reducing tinnitus distress. **Methods:** The sample consisted of 35 adults with high levels of chronic tinnitus distress from five general hospitals in the Netherlands. Participants served as their own controls. After pre-assessment (T1), participants waited for a period of 3 months, after which they were assessed again (T2) before they received six 90 min manualized EMDR treatment sessions in which tinnitus-related traumatic or stressful events were the focus of treatment. Standardized self-report measures, the Tinnitus Functional Index (TFI), Mini-Tinnitus Questionnaire (Mini-TQ), Symptom Checklist-90 (SCL-90) and the Self-Rating Inventory List for Post-traumatic Stress Disorder (SRIP), were completed again halfway through treatment (T3), post-treatment (T4) and at 3 months' follow-up (T5).

**Results:** Repeated measures analysis of variance revealed significant improvement after EMDR treatment on the primary outcome, TFI. Compared to the waiting-list condition, scores significantly decreased in EMDR treatment [ $t(34) = -4.25, p < .001, \text{Cohen's } d|z| = .72$ ]. Secondary outcomes, Mini-TQ and SCL-90, also decreased significantly. The treatment effects remained stable at 3 months' follow-up. No adverse events or side effects were noted in this trial.

**Conclusions:** This is the first study to suggest that EMDR is effective in reducing tinnitus distress. Randomized controlled trials are warranted.

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Roberts, A. K. P. (2018). The Effects of the EMDR Group Traumatic Episode Protocol With Cancer Survivors. *Journal of EMDR Practice and Research*, 12(3), 105-117.

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## ABSTRACT

The purpose of this pre-experimental case study was to explore the efficacy and safety of the Eye Movement Desensitization and Reprocessing (EMDR) Group Traumatic Episode Protocol (G-TEP) in the psychological treatment of cancer survivors and its potential effects on posttraumatic stress, anxiety, and depressive symptoms. Participants ( $N = 35$ ) were patients with various types of cancer, in different stages, initial or recurring, with diagnosis or oncology treatment received within the past year. Following an individual psychoeducational intake session, participants received two 90-minute EMDR G-TEP sessions, administered on consecutive days. They were randomly assigned to a treatment group or a delayed treatment group. Assessments were administered at pre, post, and follow-up using the Short Post-Traumatic Stress Disorder Interview (SPRINT), State-Trait Anxiety Inventory (STAI), and Beck Depression Inventory (BDI-II). Repeated measures comparisons of PTSD symptoms, anxiety, and depression revealed significant differences between pretest and posttest, with most results maintained at follow-up. Pre-follow-up effect sizes showed medium effects. These promising results suggest the value in providing a lengthier course of treatment. They support the need for research with large sample, randomized clinical trials to examine the viability of providing EMDR G-TEP in the psychological treatment of cancer survivors. No serious adverse effects were reported and we conclude that the EMDR G-TEP may be effective and safe in the psychological treatment of an oncology population.

# RECENT ARTICLES ON EMDR (CONT.)

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Schumacher, S., Niemeyer, H., Engel, S., Cwik, J. C., & Knävelsrud, C. (2018). Psychotherapeutic treatment and HPA axis regulation in posttraumatic stress disorder: A systematic review and meta-analysis. *Psychoneuroendocrinology*, 98, 186-201.

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## ABSTRACT

Posttraumatic stress disorder (PTSD) has been associated with dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis. Research over the past years has investigated potential changes of these alterations in the context of psychotherapy. Yet, no systematic review has been conducted. To summarize the current state of research on psychotherapy and HPA hormones, namely cortisol, dehydroepiandrosterone and its sulfate form (DHEA(S)), we searched for studies investigating predictions or changes in hormones over treatment course within the databases PubMed, Scopus, Medline, PsychINFO, Pilots/ProQuest, and Web of Science, and in the grey literature up to May 2018. Controlled and uncontrolled trials investigating adult samples with a clinical status of PTSD were eligible for inclusion. Twelve studies (428 participants) were included. Study quality was overall sufficient. Hormone assessment designs differed considerably. Treatment efficacy on PTSD symptom reduction was mostly high, but predictions of pre-treatment hormone concentrations on treatment efficacy were largely non-significant. Changes from pre- to post-test in basal cortisol ( $g = -0.07$ , 95% CI = -0.36; 0.21) and in the cortisol awakening response ( $g = -0.07$ , 95% CI = -0.48; 0.35) were also non-significant. Future studies require comparable designs and need to be sufficiently powered to be able to detect potential associations with HPA regulation.

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Urgolites, Z. J., Smith, C. N., & Squire, L. R. (2018). Eye movements support the link between conscious memory and medial temporal lobe function. *Proc Natl Acad Sci U S A*, 115(29), 7599-7604.

Larry R. Squire, Veterans Affairs San Diego Healthcare System, San Diego, CA 92161. Email: lsquire@ucsd.edu.

## ABSTRACT

When individuals select the recently studied (and familiar) item in a multiple-choice memory test, they direct a greater proportion of viewing time toward the to-be-selected item when their choice is correct than when their choice is incorrect. Thus, for both correct and incorrect choices, individuals indicate that the chosen item is old, but viewing time nevertheless distinguishes between old and new items. What kind of memory supports this preferential viewing effect? We recorded eye movements while participants made three-alternative, forced-choice recognition memory judgments for scenes. In experiment 1 ( $n = 30$ ), the magnitude of the preferential viewing effect was strongly correlated with measures of conscious, declarative memory: recognition accuracy as well as the difference in confidence ratings and in response times for correct and incorrect choices. In four analyses that minimized the contribution of declarative memory in order to detect a possible contribution from other processes, the preferential viewing effect was absent. In experiment 2, five memory-impaired patients with medial temporal lobe lesions exhibited a diminished preferential viewing effect. These patients also exhibited poor recognition accuracy and reduced differences in confidence ratings and response times for correct and incorrect choices. We propose that the preferential viewing effect is a phenomenon of conscious, declarative memory and is dependent on the medial temporal lobe. The findings support the link between medial temporal lobe function and declarative memory. When the effects of experience depend on the medial temporal lobe, the

effects reflect conscious memory.

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Van Minnen, A., Hendriks, L., Kleine, R., Hendriks, G. J., Verhagen, M., & De Jongh, A. (2018). Therapist rotation: a novel approach for implementation of trauma-focused treatment in post-traumatic stress disorder. *Eur J Psychotraumatol*, 9(1), 1492836.

Open access: <https://www.ncbi.nlm.nih.gov/pubmed/30034642>

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## ABSTRACT

Background: Trauma-focused treatments (TFTs) for patients with post-traumatic stress disorder (PTSD) are highly effective, yet underused by therapists.

Objective: To describe a new way of implementing (adequate use of) TFTs, using a therapist rotation model in which one patient is treated by several therapists.

Method: In this article, we will present two examples of working with therapist rotation teams in two treatment settings for TFT of PTSD patients. We explore the experiences with this model from both a therapist and a patient perspective.

Results: Our findings were promising in that they suggested that this novel approach reduced the therapists' fear of providing TFT to PTSD patients, increased perceived readiness for TFT, and decreased avoidance behaviour within TFT sessions, possibly leading to better implementation of TFT. In addition, the therapeutic relationship as rated by patients was good, even by patients with insecure attachment styles.

Conclusions: We suggest that therapist rotation is a promising novel approach to improve implementation of TFT for PTSD.

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Van Woudenberg, C., Voorendonk, E. M., Bongaerts, H., Zoet, H. A., Verhagen, M.,

# RECENT ARTICLES ON EMDR (CONT.)

Lee, C. W. et al. (2018). Effectiveness of an intensive treatment programme combining prolonged exposure and eye movement desensitization and reprocessing for severe post-traumatic stress disorder. *European Journal of Psychotraumatology*, 9(1), 1487225.

Open access: <https://www.tandfonline.com/doi/abs/10.1080/20008198.2018.1487225>

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## ABSTRACT

**Background:** There is room for improvement regarding the treatment of severe post-traumatic stress disorder (PTSD). Intensifying treatment to increase patient retention is a promising development.

**Objective:** The aim of this study was to determine the effectiveness of an intensive trauma-focused treatment programme over 8 days for individuals suffering from severe PTSD. **Method:** Treatment was provided for 347 PTSD patients (70% women; mean age = 38.32 years, SD = 11.69) and consisted of daily sessions of prolonged exposure and eye movement desensitization and reprocessing (EMDR) therapy (16 sessions in total), physical activity, and psycho-education. All participants had experienced multiple traumas, including sexual abuse (74.4%), and suffered from multiple comorbidities (e.g. 87.5% had a mood disorder). Suicidal ideation was frequent (73.9%). PTSD symptom severity was assessed by both clinician-rated [Clinician Administered PTSD Scale (CAPS)] and self-report [PTSD Symptom Scale Self Report (PSS-SR) and Impact of Event Scale (IES)] inventories. For a subsample (n = 109), follow-up data at 6 months were available. **Results:** A significant decline in symptom severity was found (e.g. CAPS intention-to-treat sample Cohen's d = 1.64). At post-treatment, 82.9% showed a clinically meaningful response and 54.9% a loss of

diagnosis. Dropout was very low (2.3%).

**Conclusions:** Intensive trauma-focused treatment programmes including prolonged exposure, EMDR therapy, and physical activity can be effective for patients suffering from severe PTSD and are associated with low dropout rates.

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Wen Kao, C., Cheng, S. M., Jung Wan, F., Shiang Lin, W., & Cune Chang, Y. (2018). Eye Movement Desensitization and Reprocessing Improves Depressive Symptoms, Quality of Life, and Heart Rate Variability in Patients with Heart Failure. *Neuropsychiatry*, 08(03), 1073-1082.

Open access: <http://dx.doi.org/10.4172/neuropsychiatry.1000435>

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## ABSTRACT

**Background:** Depression is a common comorbidity in patients with heart failure. Eye movement desensitization and reprocessing (EMDR) has been identified as an effective intervention for severe psychological distress.

**Objective:** The purpose of this study was to examine the effect of an EMDR intervention on depressive symptoms, health-related quality of life, and heart rate variability (HRV) in patients with heart failure.

**Methods:** For this longitudinal experimental study, 57 consecutive patients were randomly assigned to an experimental (n = 25, EMDR intervention) or control (n = 32, routine care) group through blocked randomization. Data were collected at four times (pre-intervention, post-intervention, and one-month and three-month follow-up) and analyzed with the generalized estimating equation approach.

**Results:** Most participants were male (57.9%), with a mean age of 63.14 ± 14.53 years and mean ejection fraction of 49.86 ± 15.18%. The majority of them were NYHA class II (n = 41, 71.9%) with a clinical history of hypertension (n = 38, 66.7%). Participants receiving the EMDR intervention showed significantly greater improvement in depressive symptoms (p < 0.001), health-related quality of life (p = 0.007), and High Frequency (HF) (p = 0.003), Low Frequency (LF) (p < 0.001), and LF/HF ratio (p = 0.001) in HRV at post-intervention compare with controls. Furthermore, the intervention effects were sustained at one month and three months after completion of the intervention.

**Conclusion:** The EMDR intervention may improve depressive symptoms, health-related quality of life, and HRV in patients with heart failure. The improvements can be maintained three months later.