



Disponible en ligne sur
SciVerse ScienceDirect
 www.sciencedirect.com

Elsevier Masson France
EM|consulte
 www.em-consulte.com/en



Foreword

EMDR therapy: An overview of current and future research

Les thérapies EMDR : une vue d'ensemble de la recherche actuelle et un aperçu de la recherche future

ARTICLE INFO

Keywords:

EMDR
 Trauma
 Eye movements
 Exposure
 Mechanism of action
 CBT

Mots clés :

EMDR
 Trauma
 Mouvements oculaires
 Exposition
 Mécanisme d'action
 CBT

ABSTRACT

Introduction. – EMDR therapy is an eight-phase treatment approach widely recognized as a frontline treatment for trauma. Research over the past decade has addressed the utility of the eye movements, mechanism of action and comparisons with other forms of therapy.

Literature and clinical findings. – More than two-dozen randomized controlled trials (RCT) demonstrate the positive effects of EMDR therapy with trauma victims. Comparisons with trauma-focused cognitive behavioral therapy (TF-CBT) indicate comparable effects sizes. Approximately 20 additional RCT evaluated the eye movement component of EMDR in isolation, without the rest of the therapy procedures. These studies document a variety of positive effects, including a rapid decrease in distress and reduced clarity of the targeted disturbing image when compared to exposure-only conditions.

Discussion. – Research findings indicate that EMDR therapy and TF-CBT are based on different mechanisms of action in that EMDR therapy does not necessitate daily homework, sustained arousal or detailed descriptions of the event, and appears to take fewer sessions. EMDR is guided by the adaptive information processing model, which posits a wide range of adverse life experiences as the basis of pathology.

Conclusions. – Research is suggested to further explore mechanisms of action and address issues of efficiency and treatment differences. Rigorous research is also needed to investigate additional clinical applications.

© 2012 Published by Elsevier Masson SAS.

R É S U M É

Introduction. – L'EMDR est une approche psychothérapique basée sur un modèle de traitement en huit phases largement reconnue en tant que prise en charge de première intention du traumatisme. Les recherches menées au cours des dix dernières années ont examiné la pertinence des mouvements oculaires, leur mécanisme d'action, ainsi que des comparaisons avec d'autres formes de thérapies.

Littérature scientifique et résultats cliniques. – Plus d'une vingtaine d'essais contrôlés randomisés (RCT) démontrent les effets positifs de l'EMDR sur les victimes de traumatisme. Les comparaisons entre l'EMDR et la thérapie comportementale cognitive axée sur le traumatisme (TCC-T) indiquent des tailles d'effet comparables. Une vingtaine de RCT additionnels ont évalué la composante mouvements oculaires de l'EMDR de façon isolée, soit abstraction faite des autres éléments des procédures de la thérapie. Ces études ont attesté d'une diversité d'effets positifs, dont une diminution rapide de la détresse et de la netteté de l'image perturbante ciblée par comparaison à des conditions exposition seule.

Discussion. – Les résultats de la recherche indiquent que l'EMDR et la TCC-T sont basées sur des mécanismes d'action différents, dans le sens où l'EMDR ne nécessite pas un travail à domicile quotidien, une stimulation prolongée ou des descriptions détaillées de l'événement, et semble nécessiter un nombre de séances inférieur. L'EMDR est guidée par le modèle de traitement adaptatif de l'information qui attribue l'origine de la pathologie à une résolution inadaptée du vécu d'une vaste diversité d'expériences douloureuses.

Conclusions. – Cet article incite les chercheurs à explorer plus en détails les mécanismes d'action de l'EMDR, ainsi qu'à aborder les questions d'efficacité et les différences de traitements. Des recherches rigoureuses seront également nécessaires pour évaluer son potentiel d'applicabilité clinique.

© 2012 Publié par Elsevier Masson SAS.

This special issue of the *European Review of Applied Psychology* presents a glimpse of some of the research and clinical applications of EMDR therapy. It is now 25 years since I discovered the dearousal effects of the eye movements and began the development of the

therapy. As discussed below, numerous studies have now documented these effects. However, after the publication of my initial randomized controlled trial (RCT) in the *Journal of Traumatic Stress* (Shapiro, 1989) and a supporting clinical case report by Wolpe and

Abrams (1991), a variety of factors launched an era of controversy, with competing claims of “pseudo-science” (Perkins & Rouanoin, 2002). Questions were raised regarding the utility of the eye movements, mechanism of action and comparisons with other forms of therapy that were subsequently addressed by numerous studies, many of which are referenced in the current issue. At the editor’s request, I will present an overview of the current and proposed future EMDR therapy research to provide context for the articles.

EMDR therapy is an integrative eight-phase treatment approach guided by the adaptive information processing (AIP) model (Shapiro, 1999, 2001, 2007). More than 20 RCT support its treatment effects, and EMDR therapy has long been considered an effective trauma treatment by a wide range of organizations, including the American Psychiatric Association (2004), Inserm (2004) and the National Institute for Clinical Excellence (2005). The most recent evaluations by the International Society for Traumatic Stress Studies (Foa, Keane, Friedman, & Cohen, 2009) and the U.S. Department of Veterans Affairs & Department of Defense (2010) designated EMDR as an “A” level treatment, described by the latter as “A strong recommendation that clinicians provide the intervention to eligible patients”.

Meta-analyses evaluating both EMDR therapy and trauma-focused cognitive behavioural therapy (TF-CBT) have reported comparable effect sizes with respect to overt symptoms of post-traumatic stress disorder (PTSD) (Bisson & Andrew, 2007; Bradley, Greene, Russ, Dutra, & Westen, 2005; Seidler & Wagner, 2006) and both are highly recommended forms of trauma treatment. As noted in the *Cochrane Database of Systematic Reviews* (Bisson & Andrew, 2007, p. 16), “Trauma-focused cognitive behavioural therapy and eye movement desensitisation and reprocessing have the best evidence for efficacy at present and should be made available to PTSD sufferers.” However, while these meta-analytic findings have established both TF-CBT and EMDR therapy as frontline trauma treatments, it is important to note that there are important differences between the two forms of therapy. For instance, prolonged exposure (PE) (Foa, Hembree, & Rothbaum, 2007), the most widely used form of TF-CBT, entails 1-2 hours of daily imaginal and in vivo exposure homework, both considered necessary to achieve positive outcomes (Foa & Jaycox, 1999). EMDR therapy, on the other hand, includes no homework. Consequently, the RCT comparing the two forms of therapy generally have included an additional 40 to 100 hours of homework in the PE condition. Kuan Ho (in this issue) examines this factor. In practical application, since homework is unnecessary, as discussed in the current issue, both group (Jarero & Artigas, this issue) and individual (Shapiro & Laub, this issue) post-disaster treatment can be completed through consecutive day treatment.

The research indicating that EMDR achieves comparable effects to PE without homework and with procedures that actually violate standard exposure theory, points to a distinctly different mechanism of action for the two modalities. For instance, EMDR therapy utilizes procedures that include only brief attention to disturbing memories and an associative process. Rather than requiring the person to remain focused on the traumatic event and describe it in detail as in PE, the client is asked to simply “notice” what emerges spontaneously during sets of bilateral stimulation (eye movements, taps or tones) and “Let whatever happens, happen.” No detailed descriptions of the event are requested and the associative process generally results in other thoughts or memories emerging that would be considered “avoidance” in PE and thus antithetical to positive effects (Foa et al., 2007).

These factors have relevance to both practice and theory. As noted by Rothbaum, Astin, & Marsteller (2005), “An interesting potential clinical implication is that EMDR seemed to do equally well in the main despite less exposure and no homework. It will be important for future research to explore these issues” (p. 614).

This is particularly salient since PE has long been guided by tenets espousing the need for exposures to be prolonged and uninterrupted in the treatment of trauma: “Because habituation is a gradual process, it is assumed that exposure must be prolonged to be effective. . . Changes in S–R associations typically require habituation of feared responses and this process unfolds gradually” (Foa & McNally, 1996, p. 334–335). These tenets do not appear applicable to EMDR therapy, which uses only intermittent attention to the disturbing elements, a procedure that has been predicted to “sensitize” rather than “desensitize” (Marks et al., 1998, p. 324). Further, direct comparisons of single-session outcomes indicated that subjective units of distress (Wolpe, 1958) levels sharply decreased with EMDR therapy and increased with PE (Ironson, Freund, Strauss, & Williams, 2002; Rogers et al., 1999). These findings, as well as RCT indicating that 84 to 100% of single-trauma victims lose the PTSD diagnosis in the equivalent of three 90-minute EMDR sessions (Marcus, Marquis, & Sakai, 1997; Rothbaum, 1997; Wilson, Becker, & Tinker, 1995; Wilson, Becker, & Tinker, 1997) call for more extensive research to determine both the procedures and underlying mechanisms that differentiate EMDR therapy from TF-CBT (Craske, Liao, Brown, & Vervliet, 2012; Solomon & Shapiro, 2008).

The eye movement component of EMDR therapy has received much attention. While an early meta-analysis indicated little support for this element (Davidson & Parker, 2001), the Practice Guidelines taskforce of the International Society for Traumatic Stress Studies (Chemtob et al., 2000, p. 150) criticized the studies in the meta-analysis for “including treatment refractory subjects, questionable adequate treatment dosage and fidelity, and limited power due to small samples.” Since that time, approximately two-dozen RCT have demonstrated positive effects. More than ten RCT demonstrated that the eye movements decrease emotion and/or imagery vividness compared to exposure-only conditions (Barrowcliff, Gray, Freeman, & MacCulloch, 2004; Schubert, Lee, & Drummond, 2011; van den Hout et al., 2011). Another ten RCT report a variety of memory effects, including increased episodic retrieval, attentional flexibility and recognition of true information (Christman, Garvey, Propper, & Phaneuf, 2003; Kuiken, D., Chudleigh, M. & Racher, 2010; Parker, Buckley & Dagnall, 2009). As reviewed by Oren and Solomon (this issue), the research indicates that the eye movement component is an active ingredient in the rapid decrease of distress evidenced in EMDR therapy. It should also be noted that the rapid declines in arousal and imagery vividness would be expected to make trauma treatment more tolerable than simple exposure. Future component analyses research is needed to evaluate this and the other components of EMDR therapy.

The AIP model guiding EMDR therapy practice posits that unprocessed memories of disturbing life experiences, not limited to “trauma”, are the foundation for a wide range of pathologies (Shapiro, 2001, 2007). Current research has supported this tenet (Affifi, Mota, Dasiewicz, MacMillan, & Sareen; Felitti et al., 1998; Mol et al., 2005; Teicher, Samson, Sheu, Polcari, & McGreenery, 2010), and the articles in this issue demonstrate its clinical application. Oren and Solomon offer an overview of a variety of clinical problems addressed through EMDR therapy. McGoldrick describes the treatment of both olfactory reference syndrome and body dysmorphic disorder. Foster indicates that EMDR memory processing can be used for performance enhancement. The applications to disaster response (Jarero & Artigas; Shapiro & Laub), domestic violence (Tarquinio), impaired attachment (Wesselmann) and complicated bereavement (Solomon & Rando) also reveal potential benefits. Their reports of efficiency parallel five RCT indicating that positive outcomes are achieved in fewer sessions with EMDR therapy than with TF-CBT (de Roos et al., 2011; Ironson et al., 2002; Jaberghaderi, Greenwald, Rubin, Dolatabadim, & Zand, 2004; Lee,

Gavriel, Drummond, Richards, & Greenwald, 2002; Nijdam Gersons, Reitsma, de Jongh, & Olf).

To conclude, the current issue offers readers an overview of research regarding proposed mechanisms of action, treatment differences and a spectrum of EMDR therapy clinical applications. Hopefully, this will encourage increased collaboration and lead to rigorous, randomized trials to further investigate these areas.

Disclosure of interest

Originator of EMDR therapy and shareholder in one of the training organizations.

References

- Affi, T. O., Mota, N. P., Dasiewicz, P., MacMillan, H. L., & Sareen, J. (2012). Physical punishment and mental disorders: results from a nationally representative US sample. *Pediatrics*, 130 <http://dx.doi.org/10.1542/peds.2011-2947>
- American Psychiatric Association. (2004). *Practice guideline for the treatment of patients with acute stress disorder and post-traumatic stress disorder*. Arlington, VA: American Psychiatric Association Practice Guidelines.
- Barrowcliff, A. L., Gray, N. S., Freeman, T. C. A., & MacCulloch, M. J. (2004). Eye movements reduce the vividness, emotional valence and electrodermal arousal associated with negative autobiographical memories. *Journal of Forensic Psychiatry and Psychology*, 15, 325–345.
- Bisson, J., & Andrew, M. (2007). Psychological treatment of post-traumatic stress disorder (PTSD). *Cochrane Database of Systematic Reviews*, 3, CD003388. <http://dx.doi.org/10.1002/14651858.CD003388.pub3>
- Bradley, R., Greene, J., Russ, E., Dutra, L., & Westen, D. (2005). A multidimensional meta-analysis of psychotherapy for PTSD. *American Journal of Psychiatry*, 162, 214–227.
- Chemtob, C. M., Tolin, D. F., van der Kolk, B. A., & Pitman, R. K. (2000). Eye movement desensitization and reprocessing. In E. B. Foa, T. M. Keane, & M. J. Friedman (Eds.), *Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies* (pp. 139–155). New York: Guilford Press (333–335).
- Christman, S. D., Garvey, K. J., Propper, R. E., & Phaneuf, K. A. (2003). Bilateral eye movements enhance the retrieval of episodic memories. *Neuropsychology*, 17, 221–229.
- Craske, M. G., Liao, B., Brown, L., & Vervliet, B. (2012). Role of inhibition in exposure therapy. *Journal of Experimental Psychopathology*, 3, 322–345.
- Davidson, P. R., & Parker, K. C. H. (2001). Eye movement desensitization and reprocessing (EMDR): a meta-analysis. *Journal of Consulting and Clinical Psychology*, 69, 305–316.
- Department of Veterans Affairs and Department of Defense. (2010). *VA/DoD clinical practice guideline for the management of post-traumatic stress*. Washington, DC: Veterans Health Administration, Department of Veterans Affairs and Health Affairs, Department of Defense.
- de Roos, C., Greenwald, R., den Hollander-Gijsman, M., Noorthoorn, E., van Buuren, S., & de Jongh, A. (2011). A randomised comparison of cognitive behavioural therapy (CBT) and eye movement desensitisation and reprocessing (EMDR) in disaster exposed children. *European Journal of Psychotraumatology*, 2, 5694. <http://dx.doi.org/10.3402/ejpt.v2i0.5694>
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., et al. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine*, 14, 245–258.
- Foa, E., Hembree, E., & Rothbaum, B. O. (2007). *Prolonged exposure therapy for PTSD: emotional processing of traumatic experiences therapist guide (treatments that work)*. NY: Oxford University Press.
- Foa, E. B., & Jaycox, L. H. (1999). Cognitive behavioral theory and treatment of post-traumatic stress disorder. In D. S. Spiegel (Ed.), *Efficacy and cost-effectiveness of psychotherapy* (pp. 23–61). Washington, DC: American Psychiatric.
- Foa, E. B., Keane, T. M., Friedman, M. J., & Cohen, J. A. (2009). *Effective treatments for PTSD: Practice guidelines of the International Society for Traumatic Stress Studies*. New York: Guilford Press.
- Foa, E. B., & McNally, R. J. (1996). Mechanisms of change in exposure therapy. In R. M. Rapee (Ed.), *Current controversies in the anxiety disorders* (pp. 329–343). New York: Guilford.
- Inserm. (2004). *Psychotherapy: An evaluation of three approaches*. Paris, France: French National Institute of Health and Medical Research.
- Ironson, G. I., Freund, B., Strauss, J. L., & Williams, J. (2002). Comparison of two treatments for traumatic stress: a community-based study of EMDR and prolonged exposure. *Journal of Clinical Psychology*, 58, 113–128.
- Jaberghaderi, N., Greenwald, R., Rubin, A., Dolatabadim, S., & Zand, S. O. (2004). A comparison of CBT and EMDR for sexually-abused Iranian girls. *Clinical Psychology and Psychotherapy*, 11, 358–368.
- Kuiken, D., Chudleigh, M., & Racher, D. (2010). Bilateral eye movements, attentional flexibility and metaphor comprehension: the substrate of REM dreaming? *Dreaming*, 20, 227–247.
- Lee, C., Gavriel, H., Drummond, P., Richards, J., & Greenwald, R. (2002). Treatment of post-traumatic stress disorder: a comparison of stress inoculation training with prolonged exposure and eye movement desensitization and reprocessing. *Journal of Clinical Psychology*, 58, 1071–1089.
- Marcus, S., Marquis, P., & Sakai, C. (1997). Controlled study of treatment of PTSD using EMDR in an HMO setting. *Psychotherapy*, 34, 307–315.
- Marks, I., Lovell, K., Noshirvani, H., Livanou, M., & Thrasher, S. (1998). Treatment of post-traumatic stress disorder by exposure and/or cognitive restructuring: a controlled study. *Archives of General Psychiatry*, 55, 317–325.
- Mol, S. S. L., Arntz, A., Metzmakers, J. F. M., Dinant, G., Vilters-Van Montfort, P. A. P., & Knottnerus, A. (2005). Symptoms of post-traumatic stress disorder after non-traumatic events: evidence from an open population study. *British Journal of Psychiatry*, 186, 494–499.
- National Collaborating Centre for Mental Health. (2005). *Post-traumatic stress disorder (PTSD): The management of adults and children in primary and secondary care*. London: National Institute for Clinical Excellence.
- Nijdam, M. J., Gersons, B. P. R., Reitsma, J. B., de Jongh, A., & Olf, M. (2012). Brief eclectic psychotherapy vs eye movement desensitisation and reprocessing therapy in the treatment of post-traumatic stress disorder: randomised controlled trial. *British Journal of Psychiatry*, 200, 224–231.
- Parker, A., Buckley, S., & Dagnall, N. (2009). Reduced misinformation effects following saccadic bilateral eye movements. *Brain and Cognition*, 69, 89–97.
- Perkins, B. R., & Rouanzoin, C. C. (2002). A critical evaluation of current views regarding eye movement desensitization and reprocessing (EMDR): clarifying points of confusion. *Journal of Clinical Psychology*, 58, 77–97.
- Rogers, S., Silver, S., Goss, J., Obenchain, J., Willis, A., & Whitney, R. (1999). A single session, controlled group study of flooding and eye movement desensitization and reprocessing in treating post-traumatic stress disorder among Vietnam war veterans: preliminary data. *Journal of Anxiety Disorders*, 13, 119–130.
- Rothbaum, B. O. (1997). A controlled study of eye movement desensitization and reprocessing in the treatment of post-traumatic stress disorder sexual assault victims. *Bulletin of the Menninger Clinic*, 61, 317–334.
- Rothbaum, B. O., Astin, M. C., & Marsteller, F. (2005). Prolonged exposure versus eye movement desensitization (EMDR) for PTSD rape victims. *Journal of Traumatic Stress*, 18, 607–616.
- Schubert, S. J., Lee, C. W., & Drummond, P. D. (2011). The efficacy and psycho-physiological correlates of dual-attention tasks in eye movement desensitization and reprocessing (EMDR). *Journal of Anxiety Disorders*, 25, 1–11.
- Seidler, G. H., & Wagner, F. E. (2006). Comparing the efficacy of EMDR and trauma-focused cognitive behavioral therapy in the treatment of PTSD: a meta-analytic study. *Psychological Medicine*, 36, 1515–1522.
- Shapiro, F. (1989). Efficacy of the eye movement desensitization procedure in the treatment of traumatic memories. *Journal of Traumatic Stress*, 2, 199–223.
- Shapiro, F. (1999). Eye movement desensitization and reprocessing (EMDR): clinical and research implications of an integrated psychotherapy treatment. *Journal of Anxiety Disorders*, 13, 35–67.
- Shapiro, F. (2001). *Eye movement desensitization and reprocessing: Basic principles, protocols and procedures* (2nd ed.). New York: Guilford Press.
- Shapiro, F. (2007). EMDR, adaptive information processing, and case conceptualization. *Journal of EMDR Practice and Research*, 1, 68–87.
- Solomon, R. W., & Shapiro, F. (2008). EMDR and the adaptive information processing model: potential mechanisms of change. *Journal of EMDR Practice and Research*, 2, 315–325.
- Teicher, M. H., Samson, J. A., Sheu, Y.-S., Polcari, A., & McGreenery, C. E. (2010). Hurtful words: association of exposure to peer verbal abuse with elevated psychiatric symptom scores and corpus callosum abnormalities. *American Journal of Psychiatry*, 167, 1464–1471.
- van den Hout, M., Engelhard, I. M., Rijkeboer, M. M., Koekebakker, J., Hornsveld, H., Leer, A., et al. (2011). EMDR: eye movements superior to beeps in taxing working memory and reducing vividness of recollections. *Behaviour Research and Therapy*, 49, 92–98.
- Wilson, S., Becker, L. A., & Tinker, R. H. (1995). Eye movement desensitization and reprocessing (EMDR): treatment for psychologically traumatized individuals. *Journal of Consulting and Clinical Psychology*, 63, 928–937.
- Wilson, S., Becker, L. A., & Tinker, R. H. (1997). Fifteen-month follow-up of eye movement desensitization and reprocessing (EMDR) treatment of post-traumatic stress disorder and psychological trauma. *Journal of Consulting and Clinical Psychology*, 65, 1047–1056.
- Wolpe, J. (1958). *Psychotherapy by reciprocal inhibition*. Stanford, CA: Stanford University Press.
- Wolpe, J., & Abrams, J. (1991). Post-traumatic stress disorder overcome by eye movement desensitization: a case report. *Journal of Behavior Therapy and Experimental Psychiatry*, 22, 39–43.

F. Shapiro

Mental Research Institute, 555, Middlefield Road, CA
94301, Palo Alto, United States

E-mail address: fshapiro@mcn.org

Received 7 September 2012

Accepted 11 September 2012