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Eye Movement Desensitization and Reprocessing (EMDR):

# Eye Movements during Positive Closure - A Patient Study

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**Abstract**

**Background:** Positive closure constitutes the seventh step in the EMDR protocol. It is thought to increase the patient's belief in a chosen positive verbal material. According to the working memory theory, making eye movements creates a less positive emotional state.

**Methods:** This study investigated the effect of eye movements during positive closure regarding the *belief* in and *emotionality* of positive verbal material. It was decided for a 2 (Time) x 2 (Condition) repeated measures within-subject design. The positive verbal material consisted of two positive personal characteristics, which were chosen from a list by the patients themselves. This study provided baseline, pre-test and post-test ratings of each positive personal characteristic to measure the degree of *belief* and *emotionality*. The patients underwent two conditions: eye movements and eye stationary. 34 patients were included in the study.

**Results:** Eye movements did not show positive nor negative effects on the degree of *belief* and *emotionality* during positive closure.

**Conclusion:** During positive closure (seventh step of the EMDR protocol) there was no difference found between eye movement versus eye stationary. In line with that outcome, it was concluded that positive closure does not have an effect on the patient and is inert. These findings do not confirm adaptive processing theory or working memory hypothesis. Clinical implications are discussed.

**Keywords:** Eye Movement Desensitization and Reprocessing Therapy, working memory theory, adaptive information processing theory, post-traumatic stress disorder, positive closure, "positief afsluiten", eye movements, eye stationary, memory, trauma

### **Preface**

In October 2014, Abigail Pinas and I decided for the master's thesis on 'positive closure during EMDR therapy'. When I first learned about EMDR therapy during my bachelor's degree, I was fascinated by its efficacy and unexplained working mechanism. Thus, the decision to work on EMDR was not a difficult one to make. Furthermore, the great opportunity to work together with various EMDR therapists and not- as in many other studies- in a lab environment motivated me and already gave me an insight into the practice as therapist.

This thesis is part of the master's program Clinical and Health Psychology of the University of Utrecht. By the means of this preface I want to thank Prof. Dr. Marcel van den Hout for his critical, fast and most importantly enlightening feedback. I also want to thank Suzy Matthijssen for her great involvement, patience and support. At last, I want to thank Abigail Pinas for the great collaboration.

Louise Messing

6<sup>th</sup> of July 2015

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## Eye Movement Desensitization and Reprocessing (EMDR):

## Eye Movements during Positive Closure - A Patient Study

Researchers and practicing psychologists are continuously searching for the best treatment for patients with post-traumatic stress disorder (PTSD). PTSD is a psychological condition described in the DSM IV-TR and is categorized as anxiety disorder. Since the DSM V came out in May 2013, PTSD is no longer categorized as anxiety disorder but now belongs to the category of trauma and stressor-related disorders. PTSD can be developed after a person has been exposed to traumatic events, such as war, rape, natural catastrophes or serious injury. As a result of these events, individuals feel anxious and helpless. Often is the traumatic event relived frequently; flashbacks and dreams of the traumatic event are common as well as avoiding stimuli, which are associated with the incident. From a neurobiological point of view it is suggested that a decreased thalamic activation is responsible for the symptoms resulting in PTSD (e.g. Bremner, Krystal, Southwick, & Charney, 1996; Liberzon, Taylor, Fig, & Koeppel, 1996). A thalamic dysfunction may explain the lack of integration, hyper-arousal and dissociation (Bergmann, 2008). As a result individuals diagnosed with PTSD cannot participate in a normal live (American Psychiatric Association, 2010). Furthermore, PTSD is associated with a higher risk of developing anxiety disorders and thus constitutes a considerable burden, on a personal level as well as on an economic level (Taylor, 2004; McCrone, Knapp, & Cawkill, 2003).

As stated by the National Institute for Health and Clinical Excellence (NICE) and the World Health Organization, Eye Movement Desensitization and Reprocessing (EMDR) is the treatment of choice for patients with PTSD (Logie, 2014). The crucial part of EMDR therapy is that the traumatic experience is reprocessed while a distracting stimulus is given. The memory of the traumatic event is often emotional and triggers pictures, feelings and sometimes bodily sensations. In most EMDR treatments, the therapist moves two fingers horizontally in a 30-centimeter distance from the patient's face and the patient is asked to follow the fingers with his or her eyes. This happens in different sets, each lasting 15 seconds. With every new set of finger movement, the

patient is asked to concentrate on the disturbing memory and to follow the fingers of the therapist. Before and after this procedure the patient is asked to rate the distress of the reprocessed memory. For this purpose, the Subjective Units of Disturbance Scale (SUDS) is used. This scale measures the subjective intensity of disturbance or distress felt by the individual at that moment of time. Moreover, the SUDS are not only used to measure the subjective disturbance felt by the individual but are also used as a benchmark for the subjective improvement of the patient's condition (Wolpe, 1973; Wolpe & Lazarus, 1966). The results of EMDR therapy are positive and show to reduce the level of emotionality and intensity (vividness) of the traumatic memory.

Research of the past 20 years has shown that EMDR is scientifically proven effective and fulfils the evidence-based criteria (Bradley, Greene, Russ, Dutra, & Westen, 2005; National Collaborating Centre for Mental Health, 2005; Seidler, & Wagner, 2006; Oren, & Solomon, 2012). A variety of experimental studies support the finding that recalling negative memories while doing eye movements reduces the vividness and the emotionality of the memory relative to recalling negative memories without making eye movements (Andrade, Kavanagh, & Baddeley, 1997; Barrowcliff, Gray, Freeman, & MacCulloch, 2004; Gunter & Bodner, 2008, experiment 1, 2 en 3; Maxfield et al., 2008; van den Hout, Janssen, & van der Beek, 2010a; van den Hout et al., 2010c; van den Hout, Muris, Salemink, & Kindt, 2001). Moreover, a meta-analysis by Lee and Cuyper (2010) reveals that eye movements during exposure are superior to exposure without eye movements. EMDR also is a fast treatment, which quickly results in a positive outcome (Ironson, Freund, Strauss, & Williams, 2002; de Jongh & ten Broeke, 2010).

### *Underlying theoretical models*

Considering the positive outcomes of EMDR therapy, the question arises how the seemingly simple treatment of EMDR works. There are various models aiming to explain the underlying mechanism of EMDR. The two most prominent theories regarding EMDR will be discussed in this thesis: *Adaptive Information Processing Theory* (AIPT) and *Working Memory Theory* (WMT).

The AIPT states that traumatic or stressful events interfere with information processing and forming of connections between different neural networks (Lanius, Paulsen, & Corrigan, 2014). According to the AIPT, the EMDR protocol involves accessing dysfunctionally stored information by stimulating the innate processing system and hereby facilitating the linking-in of adaptive information held in other memory networks (Shapiro, 1995). It is debatable what is actually meant by “innate processing system” and whether such a system exists (van den Hout & Engelhard, 2012). According to the AIPT, the thalamus is also involved in the integration of information. Thus the thalamus may be meant by the innate processing system, however, this is speculative. By the AIPT, it is stated that through any left-right stimulus, regardless which sensory channel is used, a bilateral stimulation is taking place (Shapiro, 2005). Crucially the AIPT assumes that any bilateral eye movement accelerates adaptive information processing regardless whether it is combined with positive or negative memory. However, research has shown that vertical eye movement reduces vividness and emotionality as well as horizontal eye movement which conflicts with the underlying interhemispheric (bilateral) communication assumption in the AIPT (Gunter & Bodener, 2008).

The WMT is based on a completely different rationale. Here the effect of EMDR is explained by the limited capacity of the working memory (WM) (Baddeley, 1998). When an individual performs a dual task, for example recalling a memory and having to concentrate on a moving finger, then both tasks require WM capacity. Hereby less WM capacity is available for the memory, resulting in a less vivid and less emotional memory (Andrade et al., 1997). In contrast to the process of “imagination inflation”, in which the memory gets more vivid by recalling (see for example Goff & Roedinger, 1998), the opposite, “imagination deflation”, is held to happen during EMDR. The memory gets less intense and emotional and thus has the contrary effect than imagination inflation where the memory gets more vivid. In order to validate the WMT, it has been investigated if other WM demanding tasks also reduce the liveliness of the memory. Different studies show that *auditory shadowing* (Gunter & Bodener, 2008), *articulatory suppression* (Kemps & Tiggeman, 2007) and playing a computer game while recalling a shocking movie scene (Holmes,

James, Coode-Bate, & Deepröse, 2009) reduce the effect of the traumatic memory as well. These results again support the WMT and show that no bilateral stimulation is needed (AIPT).

### *EMDR protocol*

The treatment of EMDR contains a variety of different steps as to ensure the quality of the treatment as well as to give a routine to the (in most cases) traumatized patient. Since the study is performed in the Netherlands, this thesis will focus on the protocol, which is used in the Netherlands. Here the EMDR protocol consists of eight steps, namely: (1) introduction, (2) assessment, (3) desensitization, (4) installation, (5) bodyscan, (6) future template, (7) positive closure and (8) reassessment (of the session) (Ten Broeke & De Jongh, 2003). Nearly all studies investigating EMDR therapy focus on the reducing effect of the negative memory. This is specifically the result of step three, the desensitization. A minor but as crucial part in EMDR is the focus on positive emotions.

### *Positive Closure (“positief afsluiten”)*

Positive closure constitutes the seventh step in the EMDR protocol. The specific interest of this study lies in the function and use of this step. Positive closure is added to the EMDR protocol to increase the patient’s belief in a chosen positive cognition. Furthermore, it is the aim to end the session in a positive emotional state. During the installation of the positive cognition the patient is asked: “What is the most positive and valuable about yourself that you have learned in this session (in the last hour) with regard to the traumatic event or theme?”. The patient is asked to keep the thought in mind and to concentrate on the finger movements (Ten Broeke & De Jongh, 2003). In this phase of the EMDR protocol, positive closure, the same procedure is performed as during the desensitization phase, but in which negative cognitions are combined with a dual task. The rationale, for not only combining negative but also positive cognitions with eye movement, stems from Shapiro’s AIPT. Based on the idea that bilateral stimulation accelerates adaptive information



processing (Shapiro, 2001) in both negative and positive memory material. There are two EMDR-related procedures, which also focus on the strengthening of positive cognitions; they are called 'safe place' and Resource Development and Installation (RDI) (Korn & Leeds, 2002). Regarding the great lack of research about combining eye movements with positive cognitions as performed during positive closure it is chosen to review a study by Hornsveld, Houtveen, Vroomen, Kapteijn, Aalbers and van den Hout (2011) about RDI. Overall it should be mentioned that the additive value of characteristic eye movements has never been established, neither for safe place, standard RDI protocol nor for positive closure (Hornsveld et al., 2011). RDI was introduced by Leeds in 1995 and is a special protocol proposed to be an effective intervention in the initial stabilization phase for the treatment of Complex PTSD/ DESNOS (Disorder of Extreme Stress, Not Otherwise Specified) (Korn & Leeds, 2002). During RDI the patient is asked to focus on a specific autobiographical positive memory while being exposed to bilateral stimulation. This differs from positive closure during which the patient is asked to focus on a positive non-autobiographical, just learned cognition. The results of the study by Hornsveld and colleagues (2011) are conclusive and refute the effect of RDI. They found unequivocal support for the WMT because both horizontal and vertical eye movement reduced vividness, pleasantness and the subjective experience of strength of the resources, rather than enhanced it. This means that the stimulations neither need to be bilateral nor should they be combined with positive material. This is the starting point of the research questions addressed in this thesis. If positive verbal material is not strengthened while a dual task is given, why is it still part of the EMDR protocol?

### *Recent research*

At the moment, there are no publications providing evidence that closing an EMDR session with a positive cognition while using eye movement is of use. In this field of research, there were two significant studies performed at the University of Utrecht. Ostadi and Van Rooijen (2014) compared the two conditions eye movement (EM) and eye stationary (ES) regarding the *belief* in

chosen positive verbal material. The sample population was 30 students of the University of Utrecht and the Hogeschool Utrecht (age,  $M = 21,30$ ;  $SD = 3,03$ ). In the beginning participants were asked to come up with a past negative memory and then an adjusted EMDR session was performed. Afterwards two positive cognitions were chosen from a list and combined with either EM or ES. There were two measurements (pre- and post-test) during which participants were asked to rate the *belief* in and *emotionality* of the chosen positive characteristics. A balanced design was chosen by the researchers to prevent order effects of the EM and ES conditions. A second study, as well, comparing the conditions EM and ES was conducted by Ayetmur and Coene (2014). Here, the sample population of 46 students of the University of Utrecht and the Hogeschool Utrecht (age,  $M = 22,00$ ;  $SD = 2,20$ ) were included. On the basis of a sudoku puzzle two positive characteristics were chosen by the participant and then combined with either EM or ES. In this study, like in the study by Ostadi and Van Rooijen, the *belief* in and *emotionality* of the chosen positive characteristics were measured (pre- and post-test) and a balanced design was chosen. Both studies used a 2 (time) x 2 (condition) repeated measures within-subjects design. There was a pre- and a post-measure and the two conditions EM vs. ES. Moreover, positive verbal material was offered and participants had to choose or come up with two positive characteristics about themselves. Regarding the AIPT, both studies expected that the *belief* in the positive material would be enhanced through PC. Contrary, from a WMT point of view, it was expected that PC would reduce the *belief* in the positive characteristics. Against the expectations, both studies show that the positive verbal material was neither enhanced nor reduced when combined with EM. This is based on the outcome that there was no significant difference between the two conditions EM and ES. So overall, both studies conclude that neither AIP nor WMT is the underlying working theory behind EMDR. Moreover, the use of positive closure is not supported by the findings.

A critical footnote regarding the first study (Ostadi, & Van Rooijen, 2014) needs to be taken into consideration as the participants were possibly positively biased. Through earlier studies in which they participated, they may have learned that EM has a positive effect. Therefore, the

positivity bias regarding EM may have counterbalanced the effect underlying the WMT. Resulting in a trade-off in which the positive cognition gets lessened by EM but is outweighed by the positivity bias regarding EM. In the second study (Aytemur & Coene, 2014) participants were not informed about the subject of the study and thus could not be biased. Limitations were, however, found in the chosen validity and operationalization. After all, it seemed that participants did not think of the positive verbal material while the eye movement was offered; only one participant did as instructed. Therefore, the requirement of the WMT could not be met and tested. In both studies the chosen population- students in a non-clinical setting- can be criticized, as they surely do not represent the overall population. Furthermore no patients with PTSD were included though EMDR is a useful treatment for this specific population.

### *Hypotheses*

In response to these outcomes and its limitations it was decided to further investigate these matters, however, this time in a clinical setting. Based on the two contradictory theories (AIPT and WMT) as well as the described studies, is the focus of this thesis on the primary question, whether making EM during positive closure does enhance the *belief* in (and *emotionality* of) the positive verbal material (research question 1). Therefore, the two conditions EM and ES will be compared. There is greater overall support in favour of the WMT compared to the AIPT, especially regarding the unfounded interhemispheric communication assumption underlying the AIPT. In line with the WMT, it is anticipated, that the *belief* in (and *emotionality* of) the positive personal characteristics is reduced when a dual task is applied (EM).

There are two secondary hypotheses, which will be tested as well. It is expected that as the traumatic memory gets less aversive (within session improvement), the *belief* in (and *emotionality* of) the positive characteristics increases. Holding that when the session results in a decline of the subjective disturbance felt by the patient (within session improvement) that this in turn results in more confidence in the chosen positive characteristic before positive closure (step 7) (research

question 2; between baseline and pre-test). However, the main interest of this study is to find conclusive outcomes whether the use of positive closure has an added value in EMDR therapy. That is why the third research question is formulated: Is there a relationship between the decrease in averseness of the traumatic memory (within session improvement) and the *belief* in (and *emotionality* of) the positive characteristics after positive closure (step 7) (research question 3; between pre-test and post-test)? In order to test the two secondary hypotheses, the *belief* in (and *emotionality* of) the characteristics is measured twice, once before and once after the positive closure, from now on referred to as pre- and post-test. In the beginning, before the EMDR protocol is started, a baseline measurement is undertaken. This results in a total of three points of time at which the *belief* in and *emotionality* of the characteristics are assessed. The second research question focuses on the baseline and pre-test measurements, whereas the third question relates to the pre- and post-test measurement. This procedure differs from previous research in which only two measurements were used (Ostadi, & Van Rooijen; 2014; Ayetmur, & Coene, 2014). In order to examine a change in the averseness of the traumatic event (within session improvement), SUDS are measured. This scale assesses the subjective intensity of disturbance or distress felt by the individual at that moment of time. SUDS are measured at two times, before and after the desensitization (step 4). Overall, a decline in SUDS is associated with an effective EMDR treatment. By means of difference scores of SUDS and baseline/pre-test (research question 2) or respectively pre-test/post-test (research question 3) it is aimed to get clear results regarding the use of positive closure.

## **Method**

### **Patients**

Overall, the data of 34 participants was collected. 24 female and 10 male patients were included and the age was ranging from 19 years till 55 (age,  $M = 38.79$ ;  $SD = 11.06$ ). The patients were categorized according to their level of education: 20.6% (7 out of 34) of the patients were

assigned to “university education” (WO) as well as 14.7% of the patients as ‘higher professional education’ (HBO, HEAO, HTS). Furthermore, there were two groups in which the patients were assigned to “secondary vocational education”; eight patients (23.5%) were in the group HAVO and VWO and seven (20.6%) belonging to the group MBO, MEAO, MTS and VMBO. 11.8 % were assigned to the category “lower education” (MAVO, MULO) and one patient (2.9%) in “lower school”. For only one patient no information about the educational level could be obtained. Furthermore, data was collected about prescribed psychopharmacological drugs. The majority of the patients, 58.8% (20 out of 34), took psychopharmacological drugs. There were eight patients who took more than one sort of psychopharmacological drug, so the total of patients who were prescribed medication exceeds the overall number of included patients. 18 out of 34 patients received antidepressants, seven antipsychotics, furthermore there were four patients taking anti-epileptics and two were prescribed hypnotics. An overall of 14 patients were not prescribed any psychopharmacological medication (for an overview see appendix p.60-61). All patients were diagnosed with PTSD since that was the prerequisite for participating in the study. There were 23 patients out of the 34 who had comorbidity on axis I and 10 on axis II. Treatment quantity of received EMDR sessions regarding the trauma varied: from patients who participated in the study during their first EMDR session till patients who have had 30 sessions (number of sessions,  $M = 7.18$ ,  $SD = 7.52$ ). The patient group was also diverse regarding the nature of trauma they were in treatment for: ranging from patients who developed PTSD after one traumatic incident (e.g. a car accident) to patients with complex trauma (e.g. rape, mental and physical abuse in childhood). There were no patients excluded from the study. The patients were given an information letter about the study, a short briefing, the informed consent, which should be signed and a debriefing after the participation. All documents can be found in the appendix (p.35-37, p.59).

## **Design**

The experiment had a 2(Time) x 2(Condition) repeated measures (RM) within-subject design. The independent variables were the Conditions (EM and ES) and Time (baseline, pre-test and post-

test). There were two dependent variables *belief* in and *emotionality* of the personal characteristic. Though the *belief* as well as the *emotionality* were measured at three points in time (baseline, pre-test and post-test) during the EMDR session, only the pre- and post-test measurements were used to answer the first research question. For each dependent variable the 2 x 2 RM within-subject design was applied, resulting in two separate RM within-subject designs: one for *belief* 2 (Time: pre-test and post-test) x 2 (Condition: EM and ES) and one for *emotionality* 2 (Time: pre-test and post-test) x 2 (Condition: EM and ES). Eventually, the data was analyzed two times using analyses of variance (ANOVA).

For the second and third research question a relationship was investigated using Pearson's correlation. Baseline scores were subtracted from pre-test scores and pre-test scores were subtracted of post-test scores to calculate difference scores. A correlation between difference scores of SUDS and difference scores of baseline/pre-test for the second question and respectively the correlation between SUDS and pre-test/post-test for the third research question were used in order to evaluate the relationship between the two variables.

A balanced design was chosen to monitor order effects. Thus, two personal characteristics were selected before the baseline measurement. The number of two was specifically chosen to combine each of them with either the EM and or the ES Condition at the last measurement the post-test. Furthermore, it was decided to differentiate between two positive characteristics, as one of them was the most convincing characteristic and the other the least convincing characteristic. All possible combinations were reflected in the study, referred to as protocol A, B, C and D. In protocol A, for example, the positive closure (between pre- and post-test) was started with the most convincing characteristic in combination with EM followed by the least convincing characteristic and ES. However, in protocol B the positive closure (between pre- and post-test) was started with the least convincing characteristic in combination with EM followed by the most convincing characteristic in combination with ES and so protocol C and D respectively were started with ES and either the least or most convincing characteristic. All patients were randomly assigned to either

one of the four protocols. A schematic overview can be found in the appendix (p.34).

### **Assessments**

*Selection questionnaire.* A questionnaire with information about day, sex, age, highest level of education, medication, diagnosis (Axis I and II), nature of the trauma (length of the trauma period and time since last trauma), number of EMDR sessions and the name of the therapist was designed (see appendix, p.38).

*Personal characteristics list (Persoonskenmerkenlijst).* In order to measure positive verbal material, two personal characteristics had to be chosen in the beginning of the study. These two characteristics should be chosen because the patient would like to believe in them. Furthermore, the characteristics should also be chosen with regard to the traumatic event or theme. This was done by using a list of personal characteristics wherefrom the patient could select two or come up with other characteristics in which he or she would like to believe. This list was replicated from a study by Ostadi en Rooijen (2014). There were 18 positive characteristics, based on the Big Five (van Eijck & de Graaf, 2001). The list of the personal characteristics can be found in the appendix (p.39).

*Visual Analogue Scale (VAS).* To rate the degree of *belief* a 100 mm VAS was used, ranging from 0 (not believing) to 100 (completely believing). The patients were asked specifically for their *belief* at that moment. The VAS was also used to measure the other dependent variable *emotionality*. Ranging from 0, which was defined as ‘not at all pleasant’ and 10 as ‘very pleasant’. The use of the VAS was replicated from the study by Hornsveld and colleagues (2011). For each characteristic, the patient rated how much he or she believes in the chosen trait and how pleasant he or she feels when thinking about having the specific characteristic. At last, two control questions were added regarding the last measurement at the post-test. Here, the patients were asked to what degree he or she thought of the characteristic while receiving ES and EM.

*Subjective Units of Distress/Disturbance Scale (SUDS).* This is a scale used for measuring the subjective intensity of distress or disturbance felt by the individual at that moment of time ranging from 0 (no distress at all) to 10 (unbearably distressed). SUDS are not only used to measure the

subjective disturbance felt by the individual but are also used as a benchmark for the subjective improvement of the patient's condition (Wolpe, 1973; Wolpe & Lazarus, 1966).

*Control questions.* For both variables an item was added to validate whether the patient actually thought of the positive characteristic during the post-test. This variable was measured on a VAS scale, too. The value of five was chosen as cut off score as five or below was interpreted as not thinking enough of the personal characteristic.

### **Procedure**

In total, there were 17 EMDR therapists involved in the collection of data. Before patients with PTSD participated in the study, they were given oral and written information about the study. After written informed consent was obtained, the therapist started the session. Every patient could participate only one time in the study. The data was collected during an EMDR session, in which the EMDR protocol was minimally altered for the purpose of the study. The session was started and the patients were instructed to choose two positive personal characteristics. This was done with the help of the personal characteristic list (appendix p.39). Asking specifically for two positive characteristics and also at that point of the session differs from the common EMDR protocol in which general positive verbal material is asked during the seventh step (positive closure, between pre- and post-test). Both characteristics had to be rated using a VAS scale for both the *belief* in and *emotionality* of the personal characteristic (baseline). Then the usual first six steps of the EMDR protocol were carried out regarding one traumatic picture (introduction, assessment, desensitization, installation, bodyscan and future template). SUDS were asked before and after the desensitization. Hereafter the second measurement took place (pre-test). Again patients were asked to rate the two dimensions (*belief* and *emotionality*) of the two chosen positive characteristics on a VAS. Now, the therapist had to differentiate between the most and the least believed in characteristic. This was done by holding the two VAS forms about the *belief* in the two characteristics (at the time of the pre-test measurement) against the light. Thereby a differentiation between the most and least believed characteristic could be made easily. The therapist wrote down the most and the least



believable characteristic. Subsequently the patient was asked to concentrate on the most or least believable characteristic; depending on which version (A, B, C or D; see appendix p.34) the patient was assigned to. Then the patient was asked to concentrate on the fingers of the therapist, either in the EM Condition (20-25 sets, which is equivalent to 15 seconds) or the ES Condition (fixed fingers for 15 seconds). Hereafter, the *belief* in and *emotionality* of the first characteristic was rated for the third time (post-test) on the VAS. Now, the patient was asked to concentrate on the other characteristic for the third time (post-test) and either EM or ES was applied, regarding which version of the protocol was used. Then again, the *belief* and *emotionality* of the second characteristic was rated with the VAS. Two control questions were added, asking the patient in which degree he or she had kept the characteristics in mind during the post-test. Finally, they were given the debriefing form. The therapist could fill in the selected questionnaire about the demographic information of the patient either before or after the session.

### **Data analysis**

In order to analyze the data, the software Statistical Package for the Social Science 22.0 (SPSS 22.0) was used. For the primary research question the scores of the VAS-scales were analyzed twice by 2 x 2 repeated measures ANOVA. The factors examined were: Time (pre-test and post-test), Condition (EM and ES) and the interaction effect Time x Condition. There were two secondary research questions for which Pearson's correlations were calculated using SPSS. For two variables difference scores were used as outcome variables by which the correlation was calculated. Difference scores of SUDS reflected the decrease in negativity of the trauma image (within session improvement). For *belief* two difference scores were calculated, regarding the second and third hypothesis. To test the second hypothesis VAS-scores of the baseline were subtracted by the pre-test values. For the third hypothesis the difference scores for *belief* were calculated by subtracting the scores of the pre-test from the post-test.

## Results

### *Research question 1*

#### **Belief**

Our first and main research question was whether eye movements have an effect on the *belief* in the positive verbal material. Data was analyzed using 2 x 2 repeated measured analyses of variance (ANOVA). The independent variables were the within-subject factors Time (pre- and post-test) and Condition (EM vs. ES). The dependent variable was *belief*. The main results can be found in Table 1 and Figure 1. Figure 1 shows that in none of the two Conditions an increase in self-rated *belief* is found. This is reflected in the absence of a Time main effect ( $F(1,33) = 0.03, p = .87$ ). Figure 1 also shows that the overall scores of ES were slightly higher than the scores of EM, but the Condition main effect was not significant ( $F(1,33) = 0.99, p = .33$ ). The results revealed that the crucial interaction between Time x Condition was not significant either ( $F(1,33) = 0.30, p = .59$ ). Thus, there was no significant difference between the pre- and post-test of the independent variable *belief* regarding the Conditions EM and ES.

Table 1. Mean and standard deviation of the VAS-scores of the variable *belief* in the positive personal characteristic immediately before and after positive closure (pre- and post-test) for both conditions (EM and ES).

VAS-score <i>belief</i> (N=34)						
Condition	time	M	SD	time	M	SD
EM	pre-test	5.09	.50	post-test	5.09	.57
ES	pre-test	5.37	.53	post-test	5.23	.55

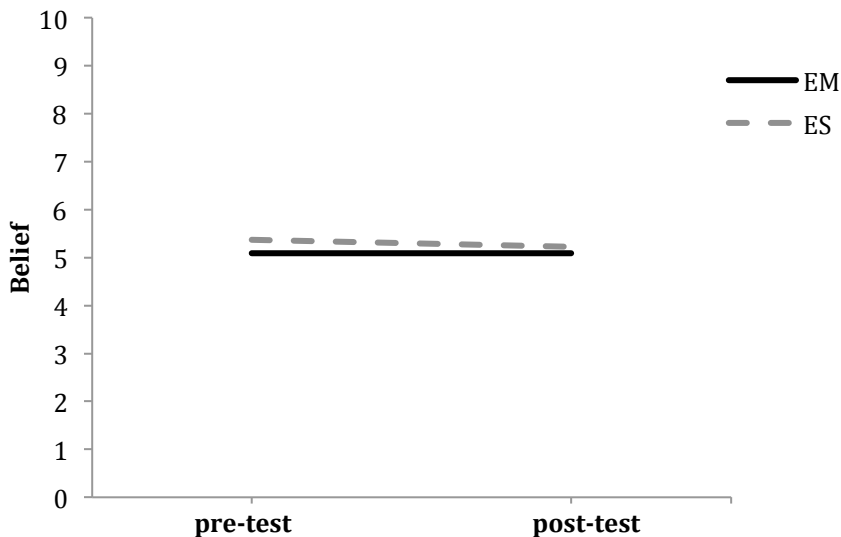


Figure 1. Mean of the VAS-scores of the variable *belief* in the positive personal characteristic immediately before and after positive closure (pre- and post-test) for both Conditions (EM and ES).

### Emotionality

For the *emotionality* the same research question was addressed: Do eye movements have an effect on the *emotionality* of the positive verbal material? This was also analyzed using repeated measures ANOVA. The mean values are given in Table 2 and Figure 2. For *emotionality* ratings, there was again no main effect for Time, showing that, overall, *emotionality* of the positive cognitions did not differ between the pre- and post-test ( $F(1,33) = 0.01, p = .91$ ). This can also be seen in Figure 2. Moreover, the Condition main effect was not significant either; the ES and EM did not differ ( $F(1,33) = 0.44, p = .51$ ). Once again, the crucial Time x Condition interaction was not significant ( $F(1,33) = 1.14, p = .26$ ). *Emotionality* of the positive characteristic thus did not change when comparing ES and EM between the pre- and post-test.

Table 2. Mean and standard deviation of the VAS-scores of the variable *emotionality* in the positive personal characteristic immediately before and after positive closure (pre- and post-test) for both conditions (EM and ES).

VAS-score <i>emotionality</i> (N=34)						
Condition	time	M	SD	time	M	SD
EM	pre-test	6.15	.52	post-test	6.49	.52
ES	pre-test	6.60	.50	post-test	6.34	.51

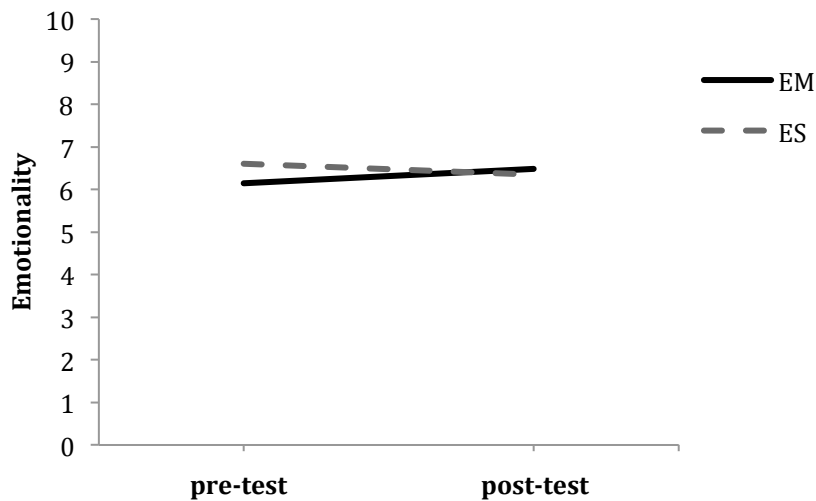


Figure 2. Mean of the VAS-scores of the variable *emotionality* in the positive personal characteristic immediately before and after positive closure (pre- and post-test) for both Conditions (EM and ES).

### Control questions

The results of the control questions showed that 12 of the 34 patients did not think about the positive characteristic when they were exposed to EM. When patients had to focus on ES, there were as well a number of 12 patients, who did not focus on the positive characteristic.

**Correlation between the course of the session and the dependent variable(s)***Research question 2*

There were two secondary hypotheses addressed in this study. It was expected that as the traumatic memory gets less aversive (within session improvement), the *belief* in (and *emotionality* of) the positive characteristics increases (research question 2 and 3). To test whether there was a relation between the change in negativity of the trauma memory (within session improvement) and the *belief* in the chosen characteristic, it was decided to calculate the correlation between these two variables. SUDS were measured twice, before and after the desensitization, in order to evaluate the decrease in negativity of the trauma image (within session improvement). The dependent variable *belief* was measured before the EMDR session (baseline) and before the positive closure was started (pre-test) (research question 2). For both variables (within session improvement and *belief*) difference scores were used as outcome variables between which the correlation was calculated. It was found that a decrease in negativity of the trauma memory (measured in difference scores of SUDS) correlated significantly with the difference scores of *belief* in the positive characteristic between the baseline and the pre-test, regardless of the condition (EM condition:  $r = -.503$ ,  $p < .05$ ; ES condition:  $r = -.357$ ,  $p < .05$ ). Thus, the degree of within session improvement (decrease in negativity of the trauma image) was accompanied by an increase in the *belief* in the positive characteristic between baseline and pre-test measurements.

Corresponding results were found for the second dependent variable *emotionality* (EM condition:  $r = -.432$ ,  $p < .05$ ; ES condition:  $r = 0.552$ ,  $p < .01$ ). Holding that when the patients feels less disturbed by the trauma (within session improvement) that this in turn results in more positive emotions when thinking of the chosen positive characteristic.

*Research question 3*

Deviating results were found for the third research question in which the focus lied on positive closure. Here, again a correlation was expected between the decrease in negativity of the

trauma memory (within session improvement) and the increase in the degree of *belief* and *emotionality* in the positive characteristic, but this time between pre- and post-test measurement (between those two test was positive closure implemented). For *belief* was no significant correlation found regardless of the Condition (EM condition:  $r = -.083$ ,  $p > .05$ ; ES condition:  $r = .10$ ,  $p > .05$ ). Holding, that within session improvement does not go together with more confidence (*belief*) in the chosen positive characteristic.

For the second dependent variable *emotionality*, a significant correlation was found only for the ES condition ( $r = 0.552$ ,  $p < .05$ ). No significant correlation was found for the EM condition ( $r = .032$ ,  $p > .05$ ). Thus, as the traumatic memory gets less aversive (within session improvement), the positive feelings (*emotionality*) regarding the positive characteristics increase, but only in the ES condition.

### **Discussion**

The aim of the study was to find out whether making EM while thinking of a positive personal characteristic has a positive effect on the patient during EMDR therapy. Positive closure constitutes the seventh step of the EMDR protocol, during which a positive cognition is combined with EM. This is thought to increase the patient's belief in a chosen positive cognition and is intended to end the session in a positive emotional state. There are two contradicting theories explaining the working mechanism behind positive closure. In line with Shapiro's AIPT (1999), it is expected that EMs have a positive effect on the *belief* in and *emotionality* of the positive characteristic. However, the WMT explains that taxing working memory during recall disrupts mental imagery and thereby reduces *belief* in and *emotionality* of the positive material (Gunter & Bodner, 2008; Engelhard et al., 2010).

*General results and explanation*

The main findings show that there was no significant difference between EM and ES in the degree of the *belief* in (or *emotionality* of) the positive personal characteristic. This is consistent with previous findings in analogous samples (Ostadi & Rooijen, 2014; Coenen & Aytemur, 2014), which have similarly found that there was no significant difference between EM and ES. Thus, neither one of the two theories, WMT nor AIPT, is supported. This strongly suggests that the positive closure procedure has no effects whatsoever and neither weakens nor strengthens the positive effects of EMDR therapy and thus has no added value. This answers the main research question and gives conclusive evidence to exclude positive closure of the EMDR protocol, at least in the way as it is practiced at this moment of time. Moreover, the results are replicated for the third time in this study but this time in a clinical setting. It should be particularly stressed that the chosen operationalization in a clinical setting- with patients and skilled EMDR therapists- reflects EMDR practice as closely as possible to reality.

In line with the WMT, it was expected that the *belief* and *emotionality* would decrease in the EM condition. However, the AIP theory suggests the contrary: combining positive verbal material with EM increases the *belief* and *emotionality*. A remarkable finding was that only around two-thirds of the patients (64.7%) thought of the positive personal characteristic at the time of the post-test (here positive closure was implemented) while being exposed to EM and ES. On the one hand, this finding can lead to questioning the validity and the chosen operationalization and whether it was really measured what was supposed to be measured. On the other hand, one has to notice that the study was performed with patients in a clinical setting. Therefore, it can be argued that these outcomes reflect normal treatment outcomes, suggesting that there are always patients who do not focus on the chosen positive verbal material during positive closure. Furthermore, one may argue that the outcome can be explained by a trade-off effect. Possibly, there are two processes displaying at the same time. One possible process is a learned positivity bias by the patient towards EM: Through the phase of desensitization the traumatic memory is made less vivid and emotionally

disturbing, resulting in a positive association with EM. Another process, in line with the WMT, could be that EM actually reduces the *belief* in the positive verbal material. As a result of these two counteracting processes no difference between EM and ES could be found after all. However, that seems rather farfetched. A more plausible explanation is that the positive closure procedure is indeed inert. It neither weakens nor strengthens EMDR therapy.

Another remark should be made when explaining the found outcomes: surely traumatic memories differ from positive cognitions about the self in terms of emotional valence. But the two types of mental phenomena may differ in other relevant aspects. During the desensitization step a *concrete* picture of the traumatic experience is chosen and combined with EM. During positive closure, however, the chosen positive characteristic is an *abstract idea* and not a concrete picture. Related to this, the traumatic experience is an episodic memory while features of the self seem part of semantic memory. A recent study by Parker, Parkin and Dagnall (2013) shows that the effect of horizontal saccadic EMs only seem to facilitate the retrieval of episodic autobiographical memories but not the one of semantic autobiographical memories. In line with that should the general question here be whether the underlying working mechanisms assumed by WMT and AIPT are applicable for abstract rather than concrete and perceptual memories and for semantic rather than episodic memories. Future research is needed to answer this question.

The present study confirmed the second hypothesis. As trauma memories become less aversive (within session improvement) there is in turn more confidence in the chosen positive characteristic. This shows that generalization takes place. The patient feels less distressed by the negative memory and therefore probably believes more in the characteristic. Moreover, the outcomes of the second hypothesis support the overall effect of EMDR therapy. Between the baseline and post-test the desensitization takes place, which most likely results in an increase in the *belief* and *emotionality* of the two characteristics. This is in line with the vast support for EMDRs positive outcome of reducing the vividness and emotionality of mental images for past negative



events (Andrade et al., 1997; Engelhard et al., 2010a; Gunter & Bodner, 2008; van den Hout et al., 2001).

Regarding the third hypothesis no clear results could be obtained. A relationship between the decrease in negativity of the trauma memory (within session improvement) and an increase in the degree of *belief* and *emotionality* in the positive characteristic was expected but this time measured before and after positive closure (pre- and post-test).

It was found that most correlations between the change in the *belief* in or *emotionality* of the personal characteristic and the decline in SUDS were not significant. This means that there is no relation between those variables. The only significant relation found was a decline in SUDS correlating with an increase of *emotionality* regarding the positive characteristic in the ES condition. This outcome suggests that not taxing working memory helps to make the patient feel better about the chosen positive characteristic. One can relate this result to the first research question whether positive closure has an added value. The overall outcome of the third hypothesis supports the findings regarding the first research question: exposing patients to EM during positive closure has no use- there is no significant difference between EM and ES.

#### *Future research*

All in all, the current study did not provide evidence for either the AIPT or the WMT. Moreover, it shows that positive closure has no added value. This was found earlier in analogous samples and now has been critically replicated in a patient sample. Caution is needed when interpreting the current findings in terms of long-term or clinical effect. Present study only analyzes short-term effects of positive closure. However, there are no theoretical (WMT) or empirical arguments to believe that positive closure has any long-term effects in the absence of beneficial short-term gains.

Furthermore, shortcomings based on the non-laboratory setting were faced. Though it was tried to secure a generalized instruction to every participating therapist, this was not realizable.

Different researchers introduced therapists orally in different settings (home, practice or outpatient clinic). Undeniably, this is a suboptimal operationalization but was difficult to prevent. In line with the non-laboratory setting, it is actually not known whether the therapists did as instructed. Individual differences between therapists in the practice and experience with EMDR therapy as well as the length of EM and ES Conditions during the minimally adjusted positive closure can also be questioned. This has an impact on the comparability of the results regarding the scores of every single patient but once again this represents the reality.

Another point of consideration can be made about the research population. Patients with a complex trauma history as well as patients with a single traumatic event were included. The question arises whether positive closure, regardless of the underlying paradigm (WMT or AIPT), has different effects on patients with complex or single trauma. One may argue that patients with a complex trauma have more difficulties in believing and feeling positive about personal characteristics than patients with a single trauma. As this assumption is presently speculative it should be addressed in future research and would improve EMDR therapy practice. In line it might also be of interest to form subgroups of the PTSD population.

### *Clinical implications*

The present findings have clear implications for EMDR clinicians and researchers. Data from analogous (lab) studies is replicated in this patient study. There are reliable drops in averseness of trauma memories within EMDR sessions: However, positive closure does not add anything to this beneficial effect of EMDR therapy. Consequently, not risking negative effects and therefore leaving out EMs during positive closure has to be the priority in the development towards an improved EMDR treatment. The general question for practitioners should be: Why do we do use EMs? Is the 'hope' of the unproven positive effect ethically justifiable? The results of this study clearly deny the use of EMs during positive closure. Besides, with this study more evidence is

found that the way in which positive closure is currently practiced belongs to an old standard and should be rejected in order to prevent possible counterproductive effects.

### *Limitations*

Several limitations of the current study should be noted. First (and foremost) the order of the EMDR protocol was altered. The positive cognitions were asked before the actual EMDR session was started; this differs from the usual protocol. Commonly, the positive cognitions are inquired after the sixth step of the EMDR protocol. Usually, the patient is asked about something positive he or she has learned about him or herself in the course of the session. In the current study, patients already had to choose the positive cognition beforehand. A second limitation was that a list of positive personal characteristics was given to the patient, wherefrom he or she should choose two positive characteristics. However, in the usual EMDR session the patient is not restricted to a list of characteristics, he or she can also come up with feelings or other positive verbal material. Both stated limitations -the altered order of the EMDR protocol and the chosen operationalization of giving a list of characteristics- were undertaken for methodological reasons. However, it can be questioned in how far the results are representative of the conventional positive closure step in the EMDR protocol.

### *Conclusion*

Despite the stated limitations, the current study provides evidence that there is no difference between EM and ES during positive closure. More importantly, from a clinical point of view, the present findings from a patient sample are fully in line with two earlier studies: positive closure seems to be an inert procedure. EMDR had strong beneficial effects regarding the *belief* in and *emotionality* of the chosen positive characteristic; there were significant correlations found between the within session improvement and the degree of *belief* and *emotionality*. However, the positive closure element did not seem to have an added value, at least there was no significant relation found

between the within session improvement and an increase in the *belief* in and *emotionality* of positive verbal material after positive closure.

The fact that there was no negative or positive effect of EMs during positive closure was not in line with predictions that derived from WMT or AIPT. While the main purpose of the present study was clinical (does positive closure have any beneficial effects?) some short remarks may be made. During positive closure there are no concrete pictures or memories used, rather abstract positive cognitions are chosen on the basis of the progress of the session; that may be the main reason why there was no conclusive outcome supporting either WMT or AIPT. More research is needed to investigate the role of positive cognitions in trauma patients to enhance treatment. Moreover, a theoretical framework is needed first to secure an ethical and responsible use of positive cognitions in EMDR therapy.

### References

- American Psychiatric Association (2000). Diagnostic and statistical manual of mental disorders. 4th ed., text revision (DSM-IV-TR). Washington, DC: Author.
- American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Washington, DC: Author.
- Andrade, J., Kavanagh, D., & Baddeley, A. (1997). Eye-movements and visual imagery: A working memory approach to the treatment of post-traumatic stress disorder. *British Journal of Clinical Psychology*, 36(2), 209-223.
- Aytemur, S. & Coenen, J. (2014). Eye Movement Desensitization and Reprocessing (EMDR): Het effect van oogbewegingen op de mate van overtuigendheid en emotionaliteit bij de positieve afsluiting van het EMDR protocol. Thesis master Klinische- en gezondheidspsychologie.
- Baddeley, A.D. (1998) Human memory: Theory and Practice. Needham Heights, MA: Allyn & Bacon.
- 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 & Psychology*, 15(2), 325-345.
- Bergmann, U. (2008). The neurobiology of EMDR: Exploring the thalamus and neural integration. *Journal of EMDR Practice and Research*, 2(4), 300-314.
- Bradley, R., Greene, J., Russ, E., Dutra, L., & Westen, D. (2005). A multidimensional meta-analysis of psychotherapy for PTSD. *American Journal of Psychiatry*, 162(2), 214-227.
- Bremner, J. D., Krystal, J.H., Southwick, S. M., & Charney, D. S. (1996). Noradrenergic mechanisms in stress and anxiety: I. Preclinical studies. *Synapse*, 23(1), 28-38.
- Eijck, K., van & Graaf, P.M., de (2001). De invloed van persoonlijkheidskenmerken op het bereikte

opleidingsniveau. *Mens en Maatschappij*, 4, 12 – 15.

- Engelhard, I. M., van den Hout, Marcel A, Janssen, W. C., & van der Beek, J. (2010). Eye movements reduce vividness and emotionality of "flashforwards". *Behaviour Research and Therapy*, 48(5), 442-447.
- Goff, L. M., & Roediger, H. L. I. I. I. (1998). Imagination inflation for action events: Repeated imaginings lead to illusory recollections. *Memory & Cognition*, 26(1), 20-33.
- Gunter, R. W., & Bodner, G. E. (2008). How eye movements affect unpleasant memories: Support for a working-memory account. *Behaviour Research and Therapy*, 46(8), 913-931.
- Holmes, E.A., James, E.L., Coode-Bate, T. & Deerprouse, C. (2009). Can playing the computer game "Tetris" reduce the build-up of flashbacks for trauma? A proposal from cognitive science. *PLoSOne*, 4, 1-6.
- Hornsveld, H. K., Houtveen, J. H., Vroomen, M., Kapteijn, I., Aalbers, D., & van den Hout, M. A. (2011). Evaluating the effect of eye movements on positive memories such as those used in resource development and installation. *Journal of EMDR Practice and Research*, 5(4), 146-155.
- Ironson, G., 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(1), 113-128.
- Jongh, A. de & Broeke, E. ten (2003). *Handboek EMDR: een geprotocolleerde behandelmethodede voor de gevolgen van psychotrauma*. Amsterdam: Pearson Assessment and Information/Harcourt.
- Jongh, A. de & Broeke, E., ten (2010). Eye Movement Desensitization and Reprocessing (EMDR). *Bijblijven*, 26, 15-20.
- Kemps, E. & Tiggemann, M. (2007). Reducing the vividness and emotional impact of distressing

autobiographical memories: The importance of modality-specific interference. *Memory*, 15, 412-422.

Korn, D. L., & Leeds, A. M. (2002). Preliminary evidence of efficacy for EMDR resource development and installation in the stabilization phase of treatment of complex posttraumatic stress disorder. *Journal of Clinical Psychology*, 58(12), 1465-1487.

Lanius, U. F., Paulsen, S. L., & Corrigan, F. M. (New York, NY, US: Springer Publishing Co; US). *Neurobiology and treatment of traumatic dissociation: Toward an embodied self. (2014). Neurobiology and Treatment of Traumatic Dissociation: Toward an Embodied Self. Xxvi, 510 Pp.*

Lee, C.W. & Cuijpers, P. (2010). A meta-analysis of the contribution of eye movements in processing emotional memories. Aangeboden ter publicatie.

Liberzon, I., Taylor, S. F., Fig, L. M., & Koeppe, R. A. (1996). Alteration of corticothalamic perfusion ratios during a PTSD flashbacks. *Depression and Anxiety*, 4(3), 146-150.

Logie, R. (2014). EMDR - More than just a therapy for PTSD? *Psychologist*, 27(7), 512-516.

Maxfield, L. (2008). Considering mechanisms of action in EMDR. *Journal of EMDR Practice and Research*, 2(4), 234-238

McCrone, P., Knapp, M., & Cawkill, P. (2003). Posttraumatic Stress Disorder (PTSD) in the Armed Forces: Health Economic Considerations. *Journal of Traumatic Stress*, 16(5), 519-522.

National Collaborating Centre for Mental Health (2005). *Posttraumatic Stress-Disorder: The management of PTSD in primary and secondary care*. National Institute for Health and Clinical excellence (NICE): London.

Oren, E., & Solomon, R. (2012). EMDR therapy: An overview of its development and mechanisms of action. *Revue Europeene De Psychologie Appliquee*, 62(4), 197-203.

Ostadi, S. & Rooijen, M., van (2014). Eye Movement Desensitization and Reprocessing (EMDR):

Het effect van eye movements op de positieve afsluiting van het EMDR- protocol. Thesis master Klinische- en gezondheidspsychologie.

Parker, A., Parkin, A., & Dagnall, N. (2013). Effects of saccadic bilateral eye movements on episodic and semantic autobiographical memory fluency. *Frontiers in Human Neuroscience*, 7 Sep, Art 630.

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(11), 1515-1522.

Shapiro, F. (1995). Eye movement desensitization and reprocessing: Basic principles, protocols and procedures. New York: The Guilford Press.

Shapiro, F. (2001). *Eye movement desensitization and reprocessing (2nd ed.)*. New York: Guilford Press.

Taylor, S. (New York, NY, US: Guilford Press; US). Clinician's guide to PTSD: A cognitive-behavioral approach. (2006). *Clinician's Guide to PTSD: A Cognitive-Behavioral Approach*. Xiv, 322 Pp.

van den Hout, Marcel A, & Engelhard, I. M. (2012). How does EMDR work? *Journal of Experimental Psychopathology*, 3(5), 724-738.

van den Hout, M., Muris, P., Salemink, E., & Kindt, M. (2001). Autobiographical memories become less vivid and emotional after eye movements. *British Journal of Clinical Psychology*, 40(2), 121-130.

Wolpe, J., & Lazarus, A. A. (Elmsford, NY, US: Pergamon Press; US). Behavior therapy techniques: A guide to the treatment of neuroses. (1966). *Behavior Therapy Techniques: A Guide to the Treatment of Neuroses*. Ix, 198 Pp.

Wolpe, J. (Oxford, England: Pergamon; England). The practice of behavior therapy. (2nd ed.).



(1973). *The Practice of Behavior Therapy*.(2nd Ed.).Xvi, 318 Pp.

**Appendix**

*All documents are in Dutch since the study was performed in the Netherlands.*

**Schematic overview of the four conditions A, B, C and D**

## POSITIEF AFSLUITEN: PATIËNT A

1. Eye Movement (EM) + meest overtuigende persoonlijke eigenschap. (setje: 20-25 keer)
2. Geen Eye Movement (ES) + minst overtuigende persoonlijke eigenschap (stil staande vinger, 15 seconden)

## POSITIEF AFSLUITEN: PATIËNT B

1. Eye Movement (EM) + minst overtuigende persoonlijke eigenschap (setje: 20-25 keer)
2. Geen Eye Movement (ES) + meest overtuigende persoonlijke eigenschap (stil staande vinger, 15 seconden)

## POSITIEF AFSLUITEN: PATIËNT C

1. Geen Eye Movement (ES) + meest overtuigende persoonlijke eigenschap (stil staande vinger, 15 seconden)
2. Eye Movement (EM) + minst overtuigende persoonlijke eigenschap (setje: 20-25 keer)

## POSITIEF AFSLUITEN: PATIËNT D

1. Geen Eye Movement (ES) + minst overtuigende persoonlijke eigenschap (stil staande vinger, 15 seconden)
2. Eye Movement (EM) + meest overtuigende persoonlijke eigenschap (setje: 20-25 keer)

1. en 2. voor ieder conditie zijn toe te passen op pagina 51 en 54.

## INFORMATIEBRIEF PATIËNT

Geachte heer/mevrouw,

Op dit moment bent u in behandeling bij het AAA, het Altrecht Academisch Angstcentrum. Op onze afdeling worden – naast en tijdens behandelingen – ook onderzoeken uitgevoerd om zo te kunnen meewerken en bewerkstelligen dat we meer te weten komen over werkzame behandelmethoden, zodat patiënten voor nu en in de toekomst de best werkzame behandeling kunnen krijgen. Op dit moment zijn we onder andere gestart met een klein onderzoek naar een onderdeel van EMDR, een behandelmethode waar u mee wordt behandeld. Deze brief is bedoeld om u wat informatie te geven over het onderzoek en om u te vragen of u mee wilt werken aan het onderzoek.

Tijdens het onderzoek kijken we naar een aantal eigenschappen van mensen. U wordt gevraagd een tweetal eigenschappen te selecteren en te beoordelen. Dit gebeurt normaal aan het einde van de sessie, maar we zullen u nu een aantal keren vragen deze eigenschappen te beoordelen; aan het begin, bijna aan het einde en helemaal aan het einde van de sessie. Wat we precies meten kunnen we nog niet toelichten, omdat dit mogelijk de resultaten van het onderzoek beïnvloedt. Wat we u wel kunnen vertellen is dat we niets aan uw normale EMDR-sessie wijzigen. U krijgt uw gebruikelijke behandeling, we voegen enkel een aantal vragen toe die gaan over eigenschappen van personen en niet over uw traumatische ervaringen. Het staat u vrij om te weigeren aan het onderzoek deel te nemen zonder dat dit invloed heeft op uw behandeling. Ook kunt u tijdens het onderzoek op elk moment met het onderzoek stoppen zonder de redenen hiervoor aan te geven. Er zijn geen negatieve effecten van dit onderzoek bij ons bekend en het onderzoek neemt ongeveer 3 minuten in beslag.

Hopelijk hebben wij u voor nu voldoende geïnformeerd. Uw behandelaar kan u ook verdere informatie verschaffen, mocht u nog verdere vragen hebben.

Vriendelijke groeten,

namens de onderzoekers,

drs. S. Matthijssen ([s.matthijssen@altrecht.nl](mailto:s.matthijssen@altrecht.nl))

Prof. dr. M. van den Hout

### **BRIEFING DOOR THERAPEUT**

Zoals u in de informatiebrief hebt kunnen lezen zijn we op dit moment gestart met een klein onderzoek. Daarbij kijken we naar een aantal eigenschappen van mensen. Mijn vraag is of u de informatie uit de informatiebrief heeft begrepen en of u ook mee wilt werken aan dit onderzoek. Zoals in de brief vermeld staat heeft het onderzoek geen effect op de behandeling en er zal inhoudelijk niets veranderen aan de behandeling. Ik stel u alleen een paar extra vragen. Er zijn geen negatieve effecten van dit onderzoek bij ons bekend en het onderzoek neemt ongeveer 3 minuten in beslag.

Voor de zorgvuldigheid zal ik u een formulier laten tekenen waarin u aangeeft dat u mee wilt werken. Als u dit kunt doorlezen en tekenen?

- > **aanbieden informed consent**
- > **de ingevulde informed consent apart van de rest van het document in de kleine enveloppe meesturen**

**INFORMED CONSENT****Titel onderzoek: het effect van oogbewegingen bij positief afsluiten****Verantwoordelijke onderzoekers:****drs. S. Matthijssen****Prof. dr. M. van den Hout*****In te vullen door de patiënt***

Ik verklaar dat ik bereid ben deel te nemen aan dit onderzoek. Ik ben op een voor mij duidelijke wijze ingelicht over de aard, methode, risico's en belasting van het onderzoek. Ik weet dat de gegevens en resultaten van het onderzoek anoniem en vertrouwelijk behandeld worden. Ik heb de mogelijkheid gehad om vragen te stellen en alle vragen zijn naar tevredenheid beantwoord. Ik stem geheel vrijwillig in met deelname aan dit onderzoek. Ik behoud me daarbij het recht voor om op elk moment, ook halverwege het onderzoek, zonder opgave van redenen mijn deelname aan dit onderzoek te beëindigen.

Naam patiënt:

.....

Geboortedatum patiënt:

.....

Datum: ..... Handtekening deelnemer:

.....

***In te vullen door de uitvoerende behandelaar***

Ik heb een mondelinge en schriftelijke toelichting gegeven op het onderzoek. Ik zal resterende vragen over het onderzoek naar vermogen beantwoorden. De deelnemer zal van een eventuele voortijdige beëindiging van deelname aan dit onderzoek geen nadelige gevolgen ondervinden.

Naam onderzoeker:.....

Datum: ..... Handtekening therapeut: .....

**DEMOGRAFISCHE GEGEVENS**

Datum:

Geslacht:

Leeftijd:

Hoogst afgeronde opleiding:

Medicatie (indien ja, waarvoor):

Classificerende diagnose:

As I:

As II:

Aard van de trauma:

- seksueel geweld
- fysiek geweld
- fysiek ongeluk
- oorlogstrauma
- fysiek geweld in kindertijd
- seksueel trauma in kindertijd
- anders, namelijk

.....  
.....  
.....

Indien periode van trauma of meerdere trauma's lengte van deze periode:

.....  
.....

Tijdsduur sinds (laatste) trauma:

Aantal EMDR sessies tot nu toe (inclusief huidige sessie):

Naam therapeut:

**PERSOONSKENMERKENLIJST**

Hier zie je een lijst met kenmerken. Wat zijn twee positieve eigenschappen met betrekking tot het thema of de gebeurtenis die we gaan behandelen die je over jezelf zou willen geloven? Je kunt een of twee van de onderstaande kiezen, maar je mag ook ieder willekeurig ander kenmerk of andere eigenschap noemen.

*Aangenaam**Netjes**Artistiek**Onderzoekend**Creatief**Open**Doorzetter**Sympathiek**Emotionele stabiel**Trots**Extravert**Veelzijdig**Fantasierijk**Vriendelijk**Hulpvaardig**Zelfverzekerd**Nauwkeurig**Zorgvuldig*

Iets anders dat positief of waardevol is, namelijk: \_\_\_\_\_

**KENMERK 1****VRAAG OVERTUIGDHEID**

In hoeverre is de eerste positieve kenmerk op jou van toepassing?

**Kenmerk 1:** \_\_\_\_\_

Geef hieronder aan hoe sterk je vindt dat deze eigenschap NU op jou van toepassing is door een streep te zetten op de horizontale lijn.





**VRAAG EMOTIONALITEIT****Kenmerk 1:** \_\_\_\_\_

*Als je eraan denkt dat deze eigenschap op jou van toepassing is, hoe prettig voelt dat voor jou NU?*

Geef hieronder aan in hoeverre de gekozen eigenschap NU prettig is voor jou door een streep te zetten op de horizontale lijn.



**KENMERK 2****VRAAG OVERTUIGDHEID**

In hoeverre is de tweede positieve kenmerk op jou van toepassing?

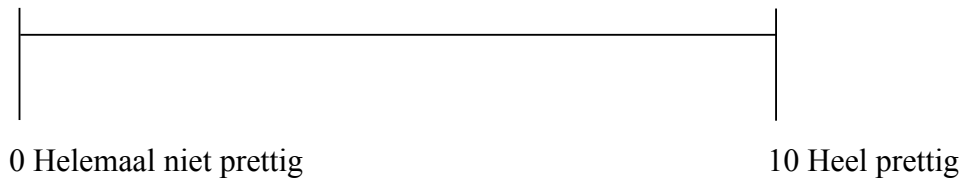
**Kenmerk 2:** \_\_\_\_\_

Geef hieronder aan hoe sterk je vindt dat deze eigenschap NU op jou van toepassing is door een streep te zetten op de horizontale lijn.



**VRAAG EMOTIONALITEIT****Kenmerk 2:** \_\_\_\_\_*Als je eraan denkt dat deze eigenschap op jou van toepassing is, hoe prettig voelt dat voor jou NU?*

Geef hieronder aan in hoeverre de gekozen eigenschap NU prettig is voor jou door een streep te zetten op de horizontale lijn.



**EMDR PROTOCOL** (stappen 1 t/m 6)

1. Introductie
2. ‘Scherpstellen’ (Assessment)
3. Desensitatie SUDS bij aanvang van de sessie: .....
4. Installatie van de PC
5. Body scan
6. Future template

**SUDS EINDE SESSIE**

.....

**KENMERK 1****VRAAG OVERTUIGDHEID**

In hoeverre is de eerste positieve kenmerk op jou van toepassing?

**Kenmerk 1:** \_\_\_\_\_

Geef hieronder aan hoe sterk je vindt dat deze eigenschap NU op jou van toepassing is door een streep te zetten op de horizontale lijn.



**VRAAG EMOTIONALITEIT****Kenmerk 1:** \_\_\_\_\_*Als je eraan denkt dat deze eigenschap op jou van toepassing is, hoe prettig voelt dat voor jou NU?*

Geef hieronder aan in hoeverre de gekozen eigenschap NU prettig is voor jou door een streep te zetten op de horizontale lijn.

0 Helemaal niet prettig 10 Heel prettig

**KENMERK 2****VRAAG OVERTUIGDHEID**

In hoeverre is de tweede positieve kenmerk op jou van toepassing?

**Kenmerk 2:** \_\_\_\_\_


Geef hieronder aan hoe sterk je vindt dat deze eigenschap NU op jou van toepassing is door een streep te zetten op de horizontale lijn.





**VRAAG EMOTIONALITEIT****Kenmerk 2:** \_\_\_\_\_*Als je eraan denkt dat deze eigenschap op jou van toepassing is, hoe prettig voelt dat voor jou NU?*

Geef hieronder aan in hoeverre de gekozen eigenschap NU prettig is voor jou door een streep te zetten op de horizontale lijn.



0 Helemaal niet prettig 10 Heel prettig

**MATE VAN OVERTUIGDHEID EIGENSCHAPPEN**

Meest overtuigende eigenschap:

Minst overtuigende eigenschap:

**POSITIEF AFSLUITEN: PATIËNT A**

Ok, dan wil ik je nu vragen je te concentreren op \_\_\_\_\_ ( meest overtuigde eigenschap)

**1. Eye Movement (EM) + meest overtuigende persoonlijke eigenschap.**

**(setje: 20-25 keer)**

**VRAAG OVERTUIGDHEID**

In hoeverre is deze positieve kenmerk op jou van toepassing?

**Kenmerk:** \_\_\_\_\_

Geef hieronder aan hoe sterk je vindt dat deze eigenschap NU op jou van toepassing is door een streep te zetten op de horizontale lijn.



**VRAAG EMOTIONALITEIT****Kenmerk:** \_\_\_\_\_*Als je eraan denkt dat deze eigenschap op jou van toepassing is, hoe prettig voelt dat voor jou NU?*

Geef hieronder aan in hoeverre de gekozen eigenschap NU prettig is voor jou door een streep te zetten op de horizontale lijn.



Ok, dan wil ik je nu vragen je te concentreren op \_\_\_\_\_ (minst overtuigde eigenschap)

**2. Geen Eye Movement (ES) + minst overtuigende persoonlijke eigenschap**

**(stilstaande vingers, 15 seconden)**

**VRAAG OVERTUIGDHEID**

In hoeverre is deze positieve kenmerk op jou van toepassing?

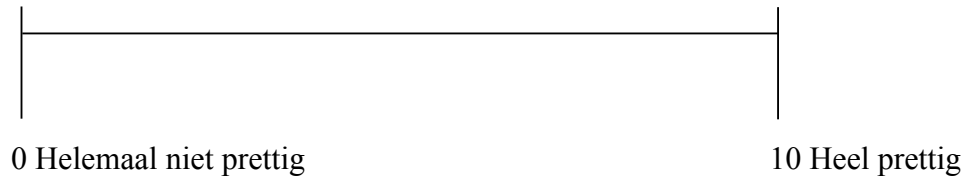
**Kenmerk:** \_\_\_\_\_

Geef hieronder aan hoe sterk je vindt dat deze eigenschap NU op jou van toepassing is door een streep te zetten op de horizontale lijn.



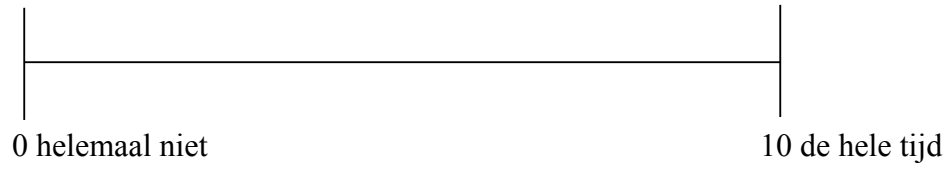
**VRAAG EMOTIONALITEIT****Kenmerk:** \_\_\_\_\_*Als je eraan denkt dat deze eigenschap op jou van toepassing is, hoe prettig voelt dat voor jou NU?*

Geef hieronder aan in hoeverre de gekozen eigenschap NU prettig is voor jou door een streep te zetten op de horizontale lijn.





Zojuist toen je die oogbewegingen maakte, in welke mate dacht je toen aan \_\_\_\_\_  
(meest overtuigde persoonlijke eigenschap)?



Zojuist toen je naar de stilstaande vingers keek, in welke mate dacht je toen aan \_\_\_\_\_ (minst overtuigde persoonlijke eigenschap)?



**DEBRIEFING**

Geachte heer/mevrouw,

Bedankt voor uw deelname aan dit onderzoek. In dit onderzoek wordt gekeken of oogbewegingen bijdragen aan de mate waarin u overtuigd bent van een bepaalde eigenschap. We kunnen ons voorstellen dat u het misschien leuk vindt om iets meer te weten over het onderzoek. Omdat we de resultaten niet willen beïnvloeden kunnen we u op dit moment verder niets toelichten, maar indien u interesse heeft in de resultaten van dit onderzoek, zijn deze over 5 maanden te verkrijgen bij uw behandelaar.

Er zijn ons geen negatieve effecten van dit onderzoek bekend, maar mocht u vragen hebben over uw deelname, kunt u te allen tijde contact opnemen met de hoofdverantwoordelijken van het onderzoek, Prof. dr. M. Van den Hout ([m.vandenhout@uu.nl](mailto:m.vandenhout@uu.nl)) of drs. S. Matthijssen ([s.matthijssen@altrecht.nl](mailto:s.matthijssen@altrecht.nl)).

Hartelijk dank voor uw deelname!

**Medicatie proefpersonen**

<b>Proefpersoon</b>	<b>Medicatie</b>	<b>Valt onder:</b>
<b>1</b>	Geen	
<b>2</b>	Zyprax- olanzapine	<b>Antipsychotica</b>
	Lyrica-pregabaline (voor Neuropathische pijn)	<b>Overige anxiolytica</b> <b>Anti-epileptica</b>
<b>3</b>	lamotrigine	<b>Anti-epileptica</b>
	Venlafaxine (bij depressie)	<b>Antidepressiva</b>
	Midazolam (bij slapeloosheid)	<b>Hypnotica</b>
	Temazepam (bij slapeloosheid)	<b>Hypnotica</b>
	Seroquel- quetiapine	<b>Antipsychotica</b>
	<b>Valproïnezuur</b>	<b>Anti-epileptica</b>
	<b>Thyrax-</b> levothyroxine	Thyreomimetica (schildklierhormoon)
	<b>v.t.D of w.t.D</b>	
<b>4</b>	Quetiapine	<b>Antipsychotica</b>
	Paroxetine (bij depressie)	<b>Antidepressiva</b>
<b>5</b>	Geen	
<b>6</b>	Citalopram (bij depressie)	<b>Antidepressiva</b>
	Quetiapine	<b>Antipsychotica</b>
<b>7</b>	Sertraline (bij depressie)	<b>Antidepressiva</b>
	Mirtazepine (bij depressie)	<b>Antidepressiva</b>
	Flurazepam (bij slapeloosheid)	<b>Hypnotica</b>
	Promethazine (bij allergische aandoeningen en reisziekte)	Antihistaminica (H1-receptorantagonisten)
<b>8</b>	Geen	
<b>9</b>	Geen	
<b>10</b>	Sertraline (bij depressie)	<b>Antidepressiva</b>
<b>11</b>	Trazolan (bij depressie)	<b>Antidepressiva</b>
	omeprazol (bij brandend maagzuur)	Protonpompremmers
	schildkliermedicatie	
	ibuprofen/ paracetamol	Pijnstillers
<b>12</b>	Clomipramine 225 (bij depressie)	<b>Antidepressiva</b>
	Risperdal, werkzame stof risperidon 1,5 mg	<b>Antipsychotica</b>
<b>13</b>	Topiramaat 25 mg 2x	<b>Anti-epileptica</b>
<b>14</b>	Geen	
<b>15</b>	Geen	
<b>16</b>	Voor astma	
<b>17</b>	Citalopram (bij depressie) 10g	<b>Antidepressiva</b>
<b>18</b>	Geen	

19	Quetiapine 25mg 2ddl	Antipsychotica
	Venlafaxine (bij depressie) 37,5mg, 2ddl	Antidepressiva
20	Fluoxetine (bij depressie) 30 mg	Antidepressiva
	Trazodon (als slaapmiddel)	Antidepressiva
21	Trazodon (als slaapmiddel)	Antidepressiva
22	Geen	
23	Sertraline (bij depressie) 1x150mg	Antidepressiva
24	Sertraline (bij depressie) 100mg 1ddl	Antidepressiva
25	Geen	
26	Citalopram (bij depressie) 1dd 20mg	Antidepressiva
27	Geen	
28	Geen	
29	Geen	
30	Geen	
31	Levocetirizine (bij allergie)	Antihistaminica (H1- receptorantagonisten)
32	Niet vermeld welke	Antidepressiva
33	Sertraline (bij depressie) 50mg 1ddl	Antidepressiva
	Quetiapine 100mg 2ddl	Antipsychotica
34	Geen	