

# EMDR PROTOCOL FOR THE MANAGEMENT OF DYSFUNCTIONAL EATING BEHAVIORS IN ANOREXIA NERVOSA

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# DATA

## ANOREXIA NERVOSA

**0,9%** **INCIDENCE RATES:** 0,9% between teenage girls and young women (female-to-male ratio is 10:1).

**15-19 years old** **LIFETIME PREVALENCE:** typically in adolescence or early adulthood (sometimes in late childhood or adulthood). there has been an increase in the high risk-group of 15–19 year old girls. It is unclear whether this reflects earlier detection of AN cases or an earlier age at onset.

**10-20% chronic** **COURSE:** 10-20 % of people with AN develops a chronic condition that persists for the life, seriously affecting their interpersonal functioning and their educational or career .

**5%** **MORTALITY RATE:** anorexia nervosa has the highest mortality rate among all mental disorders. The weighted crude mortality rate is about 5%, as consequence of malnutrition or suicide. One in five individuals with AN who died had committed suicide.



# FACTORS BEHIND AN

- 30-50%** Prevalence of childhood traumatic events (Putnam, 2001)
- 4-52%** Percentage of ED patients with a post-traumatic symptomatology (Reyes-Rodriguez et al., 2011)
- 70-100%** Prevalence of insecure attachment in ED patients (Dakanalis et al., 2013)



# TREATMENTS

**CBT (Cognitive Behaviour Therapy):** is the leading empirically supported treatment for Bulimia Nervosa (BN).

**CBT-E (Cognitive Behaviour Theory - Enhanced):** This treatment, based on the transdiagnostic theory, is designed to treat eating disorder psychopathology rather than a DSM eating disorder diagnosis. It is described as “enhanced” because it uses a variety of new strategies and procedures to improve outcomes, and to treat various groups of patients (adults, adolescents, and those treated in inpatient and day patient settings).

**CBT-MS (Multistep Cognitive Behavioral Therapy):** The treatment, derived from the transdiagnostic cognitive behavior theory of eating disorders, extends the range of applicability of standard CBT-E. It is designed to be applicable to three different levels of care (outpatient, intensive outpatient, inpatient), and to eating disorder patients of all diagnostic categories, ages, and BMI categories. Distinguishing multistep CBT-E is the adoption of a multi-step approach conducted by a multidisciplinary CBT-E team.

**Body Oriented Therapy** (relaxation techniques, mindfulness, EMDR, etc.)

**Family Therapy:** this approach that puts parents in the centre of their son's treatment. It includes support and psychoeducation



## OTHER TREATMENTS

However, although these approaches has proved to be partially effective, they don't take into account some aspects regarding the importance of the **experience of traumatic events** in the onset of eating disorders (Grilo et al., 2011; Glasofer et al., 2013; Calugi et al., 2015; Couturier et al. 2013; Fairburn et al., 2015).

The scarcity of scientific studies regarding the most effective approach for Eds, CBT and FBT, lead the most important international guidelines (e.g. the National Institute for Clinical Excellence) to conclude that no specific treatment could be recommended (Herpertz-Dahlmann, Dimpfle, Konrad, Klasen & Ravens-Sieberer, 2011; Wilson & Shafran, 2005).

**RISK:** No long-term effects; migration of symptom.





# ANORESSIA NERVOSA E EMDR

In particular, EMDR treatment is essential for adults that have experienced **traumatic events** during childhood, because their **reflective functioning** and **emotion regulation** are deficient and can effectively prevent an efficient reprocessing of the trauma.

Given that EMDR protocol helps in accessing traumatic memories and to process them with an **adaptive resolution**, our hypothesis is that the patient will gradually become able to **separate them from their past** and to start an effective **reprocessing of such memories**, leading to an improvement of ED conditions.

- ✓ Improvement and resolution of the symptomatology
- ✓ Greater capacity for emotional regulation
- ✓ Greater welfare
- ✓ Mental health



# EMDR PROTOCOL FOR THE MANAGEMENT OF DYSFUNCTIONAL EATING BEHAVIORS IN ANOREXIA NERVOSA

**Maria Zaccagnino**

Zaccagnino, M. (Manuscript in preparation). The EMDR Anorexia Nervosa Protocol. In M. Luber (Ed.), *Eye Movement Desensitization and Reprocessing (EMDR) Scripted Protocols and Summary Sheets: Treating trauma, anxiety, and mood-related conditions*. New York: Springer.



# EMDR PROTOCOL FOR THE MANAGEMENT OF DYSFUNCTIONAL EATING BEHAVIORS IN ANOREXIA NERVOSA

## PHASES OF THE PROTOCOL

**Phase 1: Assessing patient's life history** (history of attachment, mourning and /or traumatic experiences, *history of disorder, history of feeding, risk and/or maintaining factors*; therapeutic relationship, target identification and treatment planning, resources identification)

**Phase 2: Preparation** (Treatment instructions – Psychoeducation, ego state working – history of control, resources installations)

**Phase 3: Assessment**

**Phase 4: Desensitization**

**Phase 5: Installation**

**Phase 6: Body Scan**

**Phase 7: Closure**

**Phase 8: Re-evaluation**





# EMDR PROTOCOL FOR THE MANAGEMENT OF DYSFUNCTIONAL EATING BEHAVIORS IN ANOREXIA NERVOSA

## IN THE PROTOCOL WE LEARN HOW TO

- **Collect target** starting both from the past and from the present problems
- How to assess **attachment history**
- How to construct **therapeutic plan**
- Strategies for working during **hospitalization and acute phase**
- How to conduct **dissociative table at the mealtime**
- Work with the **control part**



# TARGET IDENTIFICATION AND WORK PLAN

In accordance with the EMDR standard protocol, targets will be identified according to the past-present-future sequence. Starting with the vulnerability areas which emerge in the patient's history, the therapist will use the floatback technique to trace back in the past life of the patient all the targets more directly connected with each area. This way, the patient may be helped to identify similarities and links between past and present history. The therapist may ask, *“When was the first time you remember feeling this way? When was the first time you learned ...?”*

**1. TRIGGERING EVENT:** addressing the triggering event (if any) which elicited the onset of the disorder is a priority in the therapeutic work with patients affected by eating disorders. It will thus be useful to start with the memories reported by the patient in the history taking phase and proceed with floatback to trace back all the episodes connected with the triggering event in the patient's life history.

**2. T TRAUMAS:** if the patient suffered major traumas in his or her life, they will have to be processed, in accordance with the EMDR standard protocol.



# TARGET IDENTIFICATION AND WORK PLAN

3. At this point, the therapist will have to explore the patient's relational history to trace back **THE FOOD-RELATED CRITICAL CORE OR THE DEEPEST MEANING CONNECTED WITH IT**. To achieve this objective, directly connected targets will have to be identified in the context of the parts work, in particular through work with the control part of the female patient with anorexia (see phase two for a more comprehensive description). All the targets that can help the patient cope with the difficult moment mealtime will then have to be identified. For this reason, it may be useful to bear in mind that two typical behaviors may be observed in female patients with anorexia: bingeing/purging behaviors and restriction.

4. After having investigated the vulnerability area strictly related to the onset of the symptom, all of the targets directly connected with food will have to be identified within **THE PATIENT'S LIFE AND DISORDER HISTORY**. All of the targets explaining why the patient chose food (rather than something else) to manifest her area of vulnerability will have to be especially identified. Once such targets are identified, they will have to be processed in chronological order.

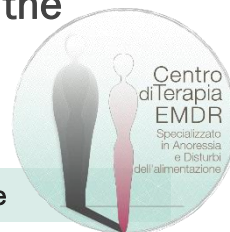
5. **WORK ON SYMPTOM AND MEMORIES CONNECTED TO IT**, in accordance with the EMDR standard protocol.



# DISSOCIATIVE TABLE AT MEALTIME

- **Identify** the different parts of the self
- Think of a **safe meeting place**
- Identify and **come into contact** with the different parts of the self
- **Become acquainted** with all the parts that are present (age, sex, physical description and function of each part)
- **Identify and legitimize the control part** (make the control part understand that it is welcome, that we need its help and that it will have to find the ways and means to let us know if we are going too fast or are asking it to do things it does not want to do or cannot do)
- Fully understand **the history and the meaning** of each parts
- **Discussion** with all the parts on what happens at mealtimes to do something to increase food intake
- At this point, the therapist will have to address **the control part** and ask it how it is feeling, whether what it is feeling now it has already felt in other circumstances in the past, and whether it is willing to **help find other ways to manage the situation** if it believes the ways being proposed are not functional. The therapist will have to accept the distress felt by the control part and point out that it must have had a good reason to act as it did in the past. However, the control part will have to be encouraged to take a leap in time by being told that the situation now is different and that no-one will ask it to do anything it does not wish to do. It may also be useful to ask the control part whether it is afraid that other parts of self may gain the upper hand. Thus **ask the adult part of the patient to interact directly with the control part.**

*For a more comprehensive illustration of the parts work concept refer to the studies conducted by Solomon, van der Hart, Steele, Fraser, Forgash, Knipe, Gonzalez and Mosquera.*



# WORKING PROTOCOL WITH EATING DISORDERS IN THE ACUTE PHASE (HOSPITALIZATION)

With patients of this type it is extremely necessary to **work on resources**, using the model suggested in phase two of this protocol. This way, it may be possible to actively work on the patient's **motivation** for treatment. It is thus suggested that work on resources be undertaken in every EMDR session.

In order to secure the patient's **cooperation** in the treatment of the acute phase, the therapist must work on the **control part**. It is thus advised that this part be **accepted, validated** and **supported** at every EMDR session.

The **work plan** should be structured according to the following priorities:

- triggering event
- dissociative table at mealtime
- desensitization of the positive effects when the patient does not eat (*what is the most positive thing about her not eating?*)
- desensitization of positive feedback when not eating and the consequent weight loss.

Work on the patient's **body image** and the possible unpleasant physical sensation related to the time in which she eats.



# PARTS WORK: THE CONTROL HISTORY

In the preparatory phase it is important for the therapist to **explain** to the patient the **meaning of the parts of self** concept, and specify that such parts play a fundamental role in her history and in the history of the eating disorder. In order for a climate of trust to be established between the therapist and the patient, the therapist must co-construct together with the patient shared knowledge about a specific aspect of her personality which plays a crucial role in maintaining the symptom: the **control part**. Only after working in a spirit of **co-awareness**, **acceptance** and **recognition**, will it be possible to ask specific questions of this part, to understand its history. One question may be where it comes from, and where the patient has learned to use this specific defense strategy.

- *Is this part visible? How old is it? What happened to it?*
- *Where did you learn to control?*
- *What is the task assigned to this part?*
- *Are you protecting someone?*
- *If the control part were no longer there, what would happen?*
- *Are you able to see the part that you are protecting? Can you describe it? What is its history?*

*For a more comprehensive illustration of the parts work concept refer to the studies conducted by Solomon, van der Hart, Steele, Fraser, Forgash, Knipe, Gonzalez and Mosquera.*





# EMDR AND CBT FOR ANOREXIC PATIENTS

## A CLINICAL COMPARATIVE STUDY

(Zaccagnino, Cussino, Callerame, Civilotti, Fernandez). Rivista di Psichiatria, in press.

### AIM OF THE STUDY

To evaluate the kind of effect and the efficacy of the EMDR methodology versus CBT in the treatment of AN in terms of work on traumatic memories connected to them.

### HYPOTHESIS

From the assumption evidence-based (Shapiro, 2014) that EMDR protocol helps in accessing traumatic memories and to process them with an adaptive resolution, our hypothesis is that the patient will gradually become able to separate them from their past and to start an effective reprocessing of such memories, leading to an improvement of ED conditions.

### PARTICIPANTS

Participants were 20 Italian adolescent and young adult patients. The selection criteria were female subjects aged 15-25 years, with a DSM V diagnosis of AN. Exclusion criteria were inability to speak or read Italian, and/or understand the interview questions, any metabolic pathology interfering with eating or digestion (e.g. diabetes), or psychotic disorder.



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The study is a clinical comparative study of two active interventions: EMDR therapy and CBT. The study was conducted over a period of twelve months and we did not have any patient dropouts from the treatment.

## INTERVENTIONS

The *EMDR* treatment followed Anorexia Nervosa protocol (Zaccagnino, 2015).

2 sessions of resource development prior to EMDR reprocessing  
36 sessions of EMDR treatment over the span of one year's time

The *CBT* session were provided following CBT guidelines

38 CBT session: therapeutic approach incorporated a variety of cognitive, behavioral and experimental techniques.

## TOOLS

- the Adult Attachment Interview (AAI, George, Kaplan and Main, 1985),
- the Eating Disorders Inventory-3 (EDI-3; Garner, 2004),
- the Adverse Childhood Experiences Questionnaire (Felitti, 2012),
- the Symptom Checklist-Revised (SCL-90-R; Derogatis, 1990),
- the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004).



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### DESCRIPTION OF THE SAMPLE AT T0 (BASELINE)

The mean age of the patients was comparable between the two groups (mean age: 18.80 years, SD=2.04 for EMDR and 19.70 years, SD=2.86 for CBT).

A t-Student analysis revealed the absence of significant differences between EMDR and CBT patients in terms of age, BMI and all clinical subscales studied at baseline (all  $p > .05$ ).

### STATISTICAL ANALISYS

Generalized linear model (GLM) Repeated Measures Multivariate ANOVA (RM-MANOVA) was used to investigate both the main effects and interactions at T0 and at T1, between and within EMDR and CBT groups.

Pairwise comparisons between groups were studied utilizing simple contrast and will be described as means difference with the Sidak correction 95% confidence interval (95% CI) for multiple comparisons (in preparation).



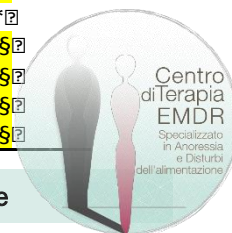
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\* significant pre-post effect, independent of the type of treatment (CBT or EMDR).  
§ significant group (CBT vs. EMDR)-by-time (pretreatment vs. posttreatment) interaction effects.

	T0				T1				Sig.
	EMDR		Control		EMDR		Control		
	M	DS	M	DS	M	DS	M	DS	
Body Mass Index (BMI)	14,95	1,35	15,04	1,33	18,98	1,22	17,28	1,34	*\$
EDI-3									
Drive for Thinness (DT)	19,20	5,67	20,00	5,14	10,40	5,23	14,00	4,99	*\$
Bulimia (B)	7,10	2,85	6,40	2,99	5,20	2,74	3,70	2,58	*
Body Dissatisfaction (BD)	27,10	6,54	25,70	5,68	20,00	5,83	20,10	5,17	*
Low Self-Esteem (LSE)	13,00	3,94	14,20	3,94	6,70	3,02	11,50	3,31	*\$
Personal Alienation (PA)	10,20	3,91	11,80	3,71	8,90	3,60	10,30	3,74	*
Interpersonal Insecurity (II)	9,10	4,91	9,90	4,46	3,90	3,14	7,30	4,47	*\$
Interpersonal Alienation (IA)	7,70	2,91	8,20	2,78	4,90	2,28	4,10	2,02	*
Interceptive Deficits (ID)	17,20	5,81	18,80	3,85	8,70	6,29	15,90	4,15	*\$
Emotional Dysregulation (ED)	9,60	3,31	9,20	2,44	4,30	2,26	6,20	2,30	*\$
Perfectionism (P)	10,50	2,99	9,40	3,41	5,90	2,13	4,40	2,95	*
Asceticism (A)	10,80	3,85	11,10	3,07	8,00	3,65	8,50	3,21	*
Maturity Fears (MF)	9,20	3,55	9,00	3,86	3,20	2,82	6,70	3,97	*\$
SCL-90									
Somatization (SOM)	1,30	0,63	1,37	0,75	0,57	0,31	0,80	0,72	*
Obsessive-Compulsive (O-S)	1,79	0,77	1,19	0,50	0,72	0,39	0,54	0,47	*\$
Interpersonal Sensitivity (INT)	2,20	0,52	2,01	0,93	1,00	0,51	1,66	0,91	*\$
Depression (DEP)	2,05	0,76	1,86	1,01	0,76	0,55	0,90	0,47	*
Anxiety (ANX)	2,07	0,77	2,10	0,90	0,64	0,42	0,71	0,61	*
Hostility (HOS)	2,07	0,77	1,76	1,03	0,84	0,60	1,12	0,71	*\$
Phobic Anxiety (PHOB)	0,44	0,42	0,45	0,24	0,42	0,24	0,36	0,26	
Paranoid Ideation (PAR)	0,69	0,27	0,66	0,32	0,67	0,30	0,53	0,28	
Psychoticism (PSY)	0,47	0,29	0,54	0,24	0,40	0,25	0,44	0,25	
MDERS									
Non-Acceptance of Emotional Responses (NA)	18,70	2,91	20,00	2,87	10,10	2,85	16,80	2,57	*\$
Difficulties Engaging in Goal-Directed Behavior (GDB)	15,10	4,36	17,30	3,13	9,20	3,97	11,60	3,53	*
Impulse Control Difficulties (ICD)	16,10	2,73	15,70	3,30	8,40	1,35	10,00	3,43	*\$
Lack of Emotional Awareness (EA)	18,50	3,57	19,70	3,77	9,90	3,45	14,60	3,57	*\$
Limited Access to Emotion Regulation Strategies (ERS)	20,50	2,88	20,60	3,86	12,90	3,51	15,80	4,78	*\$
Lack of Emotional Clarity (EC)	14,10	2,92	13,00	1,49	5,70	2,58	9,30	2,11	*\$



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## A CLINICAL COMPARATIVE STUDY

(Zaccagnino, Cussino, Callerame, Civilotti, Fernandez). Rivista di Psichiatria, in press.

### Evaluation of efficacy

One-way within-subjects ANOVA was performed to test whether there was a difference in the clinical scores between baseline and post-treatment conditions. The mean participant scores of all tools (EDI-3; SCL-90; DERS) significantly decreased from T0 to T1 with both the treatment except for the SCL-90 subscales PHOB, PAR and PSY (under clinical cutoff at T0).

Although both groups had an improvement in 24 of 27 subscales, the comparison between pre-treatment and posttreatment scores showed that the EMDR group scored significantly lower in the following subscales:

#### EDI-3

- *Drive for Thinness*
- *Low Self-Esteem*
- *Interpersonal Insecurity*
- *Interoceptive Deficits*
- *Emotional Dysregulation*
- *Maturity Fears*

#### SCL-90

- *Obsessive-Compulsive*
- *Interpersonal Sensitivity*
- *Hostility*

#### DERS

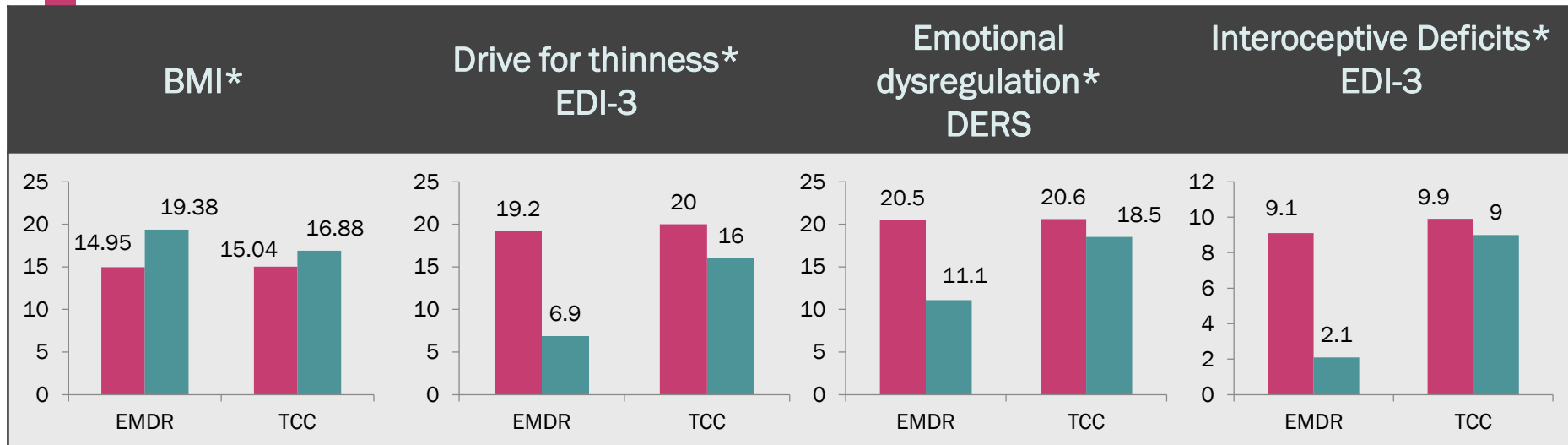
- *Non acceptance of emotional responses*
- *Impulse Control Difficulties*
- *Lack of Emotional Awareness*
- *Limited Access to Emotion Regulation Strategies*
- *Lack of Emotional Clarity*

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**Drive for thinness:** Concerns about dieting, preoccupation of diet restrictions, and fear of weight gain. Is linked in a belief that thinness will lead to social benefits, such as popularity and academic success. Failure to achieve his thinness would deprive the individual from these benefits and thus result in body dissatisfaction.

**Perfectionism:** A tendency to strive for flawlessness and set excessively high performance standards. An elevated score on this scale indicates “an incessant demand for achieving the highest possible standards for performance. Failure to meet these standards is associated with self-criticism

**Emotional Dysregulation:** The Emotional Dysregulation scale measures impulse control and issues of substance abuse, as they are characteristic to eating disorders (Garner, 2004). An elevated score on this scale “indicates an extreme tendency toward mood instability, impulsivity, recklessness, anger, and self-destructiveness. There may be associated problems with substance abuse involving alcohol, drugs, or both



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**Interoceptive Deficits:** Amount of confusion in recognizing and responding to emotional states. The interoceptive awareness (IA) is defined as sensitivity to stimuli originating within the body, encompasses recognition and accurate identification of both appetite signals and emotional cues. IA includes both acceptance of affective experience and clarity regarding emotional responses.

**Coherence scales AAI:** refers to the degree to which participants discussed and evaluated their attachment-related experiences in a “reasonably consistent, clear, relevant, and succinct manner



# EMDR AND CBT FOR ANOREXIC PATIENTS

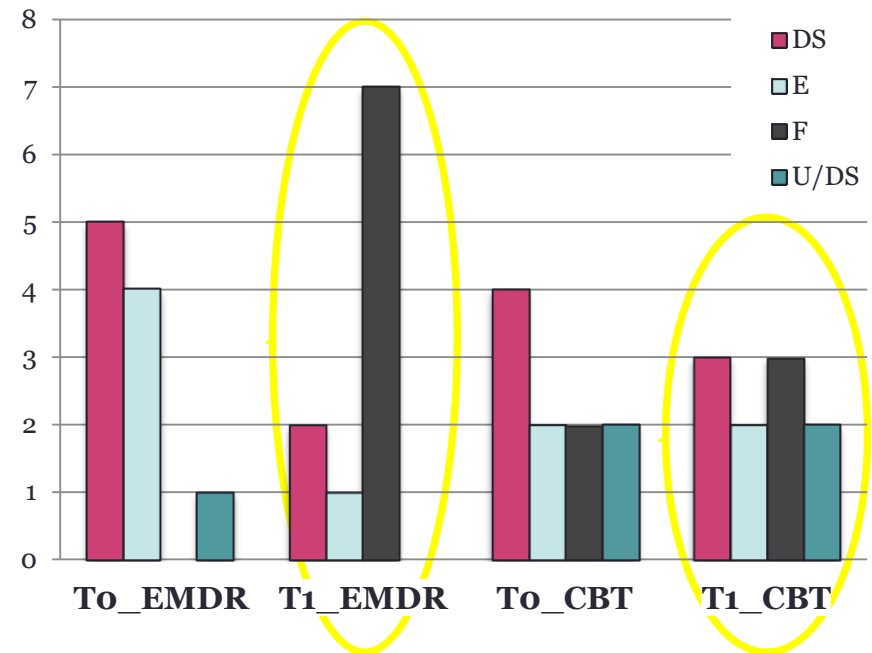
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### Attachment status

AAI – Coherence: mean (ds)

	TO_AAI_RF	T1_AAI_RF	Mean Difference
EMDR	3,45 (0,6)	5,75 (0,68)	2,3 (0,6)
CBT	3,6 (0,66)	4,18 (0,66)	0,58 (0,7)



Both EMDR and CBT patients have reported **higher scores** on coherences scales. In the EMDR group, whereas at t0 no patients were classified as secure, at t1 7 patients became **earned secured** with an alternate preoccupied or dismissing classification.

In the CBT group, the two patients classified as primary **Unresolved**, continued to have the same U classification even after the end of treatment.

# EMDR AND CBT:

## DO THEY HAVE TWO DIFFERENT KEY-MECHANISMS?

### AIM

The purpose of this part of the study was to examine selected factors that influence the change in terms of BMI (from T0 to T1) among AN patients in EMDR vs CBT approach.

### STATISTICAL ANALISYS

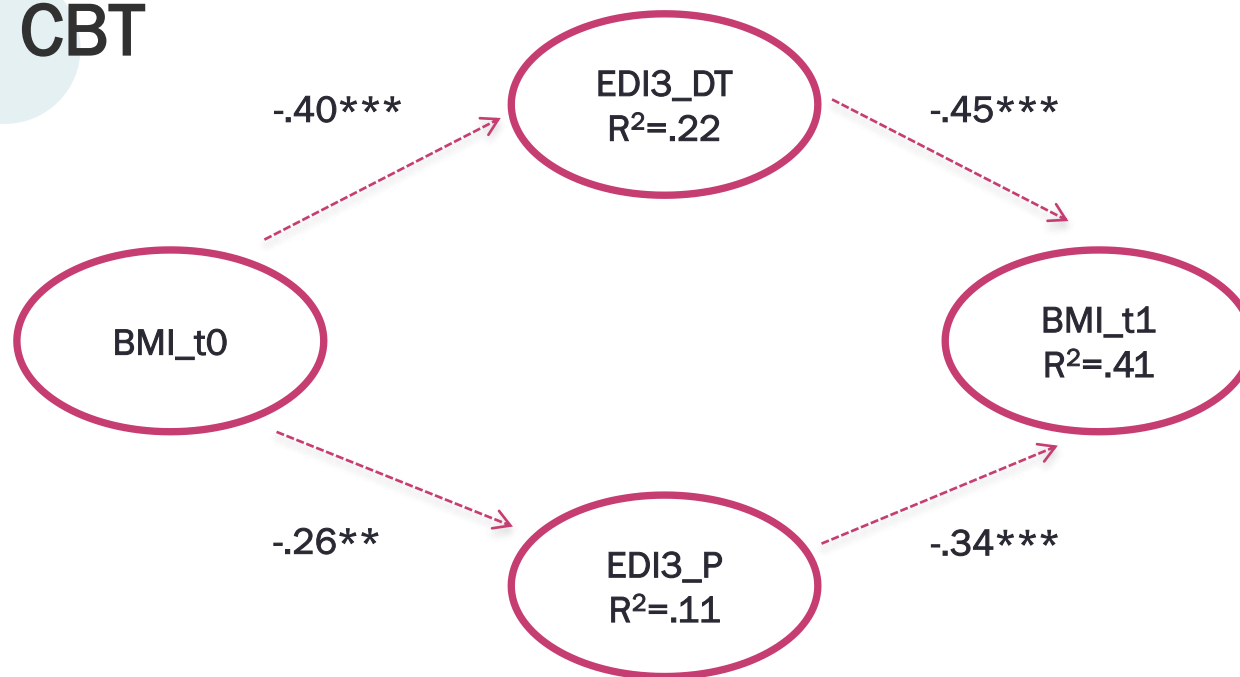
This study employed hierarchical regression and path mediation analyses to examine baseline situation (BMI at T0) and psychological factors that influenced BMI at T1.



# EMDR AND CBT:

## DO THEY HAVE TWO DIFFERENT KEY-MECHANISMS?

### CBT



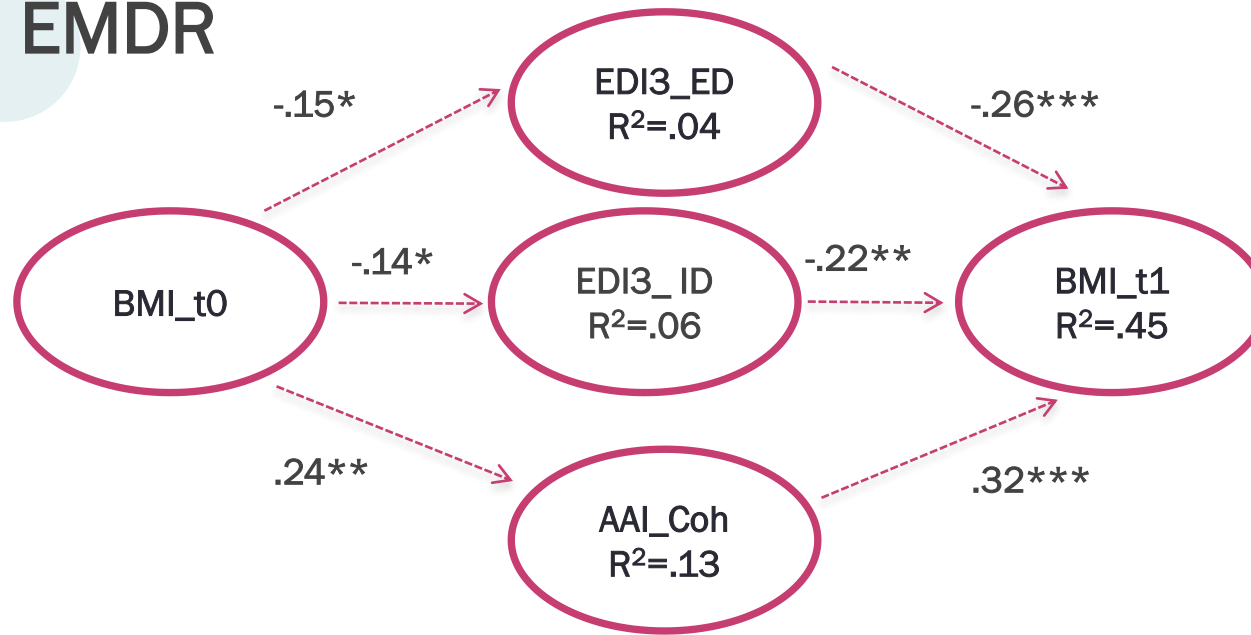
Model Fit: Satorra-Bentler  
 $X^2=3.80$ ,  $p=.15$ ; CFI=.99;  
RMSEA=.08, SRMR=.02  
Total Indirect Effect of BMI\_T0  
on BMI\_T1 (.27.,  $p<0.001$ )  
Indirect Effect of BMI\_T0 on  
BMI\_T1 through DT (.18,  
 $p<.001$ );  
Indirect Effect of BMI\_T0 on  
BMI\_T1 through Aai\_Coh (.09,  
 $p<.001$ );  
Note. All parameter estimates  
are from the standardized  
solution.  
\* $p<.05$ ; \*\* $p<.01$ ; \*\*\* $p<.001$

Our regression analysis in the CBT group showed three primarily influential factors for explain BMI at T1. These include *BMI at t0*, *Drive for Thinness (t1)* and *Perfectionism (t1)* → CBT is useful in facilitating an improvement of the psychopathology indicators and in helping patients to **decrease behavioral symptoms related to disease**.

# EMDR AND CBT:

## DO THEY HAVE TWO DIFFERENT KEY-MECHANISMS?

### EMDR



BMI at t0 on BMI at T1  
Model Fit: Satorra-Bentler  
 $X^2=1.61$ ,  $p=.20$ ; CFI=.99;  
RMSEA=.06, SRMR=.01  
Total Indirect Effect of BMI\_T0 on  
BMI\_T1 (.15,  $p<0.001$ )  
Indirect Effect of BMI\_T0 on  
BMI\_T1 through Aai\_Coh (.08,  
 $p<.001$ );  
(Other two indirect effects  
approached one tail satatistical  
significance, respectively  
EDI\_ED $p=.057$  and ED3\_ID  
 $p=.054$ )  
Note. All parameter estimates are  
from the standardized solution.  
\* $p<.05$ ; \*\* $p<.01$ ; \*\*\* $p<.001$

In regards to the EMDR group, the most significant factors included *Emotional Dysregulation (t1)*, *Interoceptive Deficits (t1)*, BMI at t0 and the AAI-Coherence Score (t1) → reprocessing of traumatic memories related to the onset and maintenance of the disorder and ego-state treatment (control part) → patients become **more able to show a coherent narrative about their past history**, without overwhelming feelings of anger, shame and fear related to distressing memories (<ED) **and the dysfunctional material** associated with them, such as emotional disturbance, negative cognitions and physical sensations, **can be integrated within the memory system in a more adaptive and functional way** (<ID)



# CONCLUSION

In agreement with the scientific literature in this field, in the **CBT group** there were noticeable improvement regarding the presence of symptomatology associated with eating disorders → **the outcome is probably linked more on a behavioral and cognitive level directly linked to anorexia nervosa symptomatology** (drive for thinness and perfectionism) (Grilo et al., 2011; Glasofer et al., 2013; Calugi et al., 2015).

Given its capacity to **intervene in an active way on these early traumatic memories**, the **EMDR** treatment is able to lead to **a resolution of the unresolved material**, to **a real change of the representations of early attachment relationships with caregivers**, to **an increased access to adaptive information related to distressing memories** and to **a decrease of negative beliefs related to self-worth and vulnerability** → with a better impact on AN symptomatology and emotion regulation, and on general well being and mental health.

In fact, the role of adverse childhood experiences (ACEs), relational trauma, attachment trauma and traumatic events is widely recognized as risk factors for the development of such pathology and is also reflected in the DSM-5 (Felitti et al., 2010; Murphy et al., 2013; Racine et al., 2015; Bachol et al., 2013; Zilier et al, 2015; Madowitz, 2015; Monteleone et al, 2015). The development of the dysfunctional eating behaviors could be seen as an attempt to manage overwhelming emotions, memories and stressors experienced in the trauma.



# FUTURE RESEARCH

EMDR PROMOTES INTEGRATION OF NEURAL PROCESSING OF DISTURBING EMOTIONS IN PATIENTS WITH ANOREXIA NERVOSA: a randomized EEG study by Zaccagnino, Cussino, Callerame, Civilotti, Fernandez.

- Replicated and extend the results
- A **neuroscientific assessment** of the increase of integrative processes (higher scores on AAI coherences scales and treatment efficacy) by the valuation of cortical connectivity modifications by electroencephalography (EEG) lagged coherence analysis\*

**HP → T0:** low cortical connectivity both with respect to attachment, both with respect to the narrative on the symptom  
**→ T1 POST EMDR:** an increase in cortical connectivity, both with respect to attachment, both with respect to the narrative on the symptom.

\*An index of integrative and disintegrative processes in the brain and in the mind, the dynamic cortical connectivity networks are considered to play a crucial role in high-level cognitive functions: working memory, top-down executive functions, attentive tasks and consciousness



# THANKS FOR YOUR ATTENTION.

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