

# Posttraumatic Stress Disorder and Related Diseases in Combat Veterans

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*Editor*

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Masters of Chaos, by MSG Christopher Thiel, courtesy of the Army Art Collection, US Army Center of Military History.

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Accelerated resolution therapy (ART) is a relatively new therapy that includes many techniques for resolving the traumatic memories associated with posttraumatic stress disorder (PTSD). Preliminary evidence to date suggests that ART is highly effective, requires fewer sessions, and has a much greater completion rate than traditional PTSD therapies. A key difference between ART and other therapies for PTSD is that ART is an *internal process* that focuses on *images* rather than cognitions or feelings. This aspect is particularly important in a military population, since veterans are often not comfortable or legally permitted to share the details of their combat traumas due to their graphic intensity, potential association with war crimes, or inclusion of classified information. Herein, we provide a general description of the therapy, a summary of relevant clinical investigations, and present two cases that highlight the use of ART in resolving combat-related and early childhood traumas. The first case is of a fairly typical Iraq/Afghanistan veteran with complex PTSD related to multiple combat traumas and childhood abuse. The second case is of a different veteran's first ART session, demonstrating ART's unique ability to resolve long-standing, painful emotions such as shame and guilt very rapidly.

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## 9.1 General Description

ART is an emerging, trauma-focused approach to addressing traumatic memories, as well as difficult and conflicted feelings that may be based on past experience. ART employs imagery, metaphors, and Gestalt techniques to help patients achieve reduction of their emotional symptoms and a self-directed resolution to their problems. Developed in 2008 by Laney Rosenzweig, it has primarily been studied at the University of South Florida for symptoms related to PTSD [1–3]. A summary of published literature on ART may be found later in this chapter.

ART is both therapist-directed and patient-driven. It consists of a basic protocol to address specific memories and events, as well as an advanced protocol to address more psychologically complex issues that arise within the context of the basic protocol. ART interventions are carefully scripted and designed to help the patient symbolically separate from a troubling past and advance toward a more positive future. While ART foundationally addresses traumatic memories, its design and structure permit its application in a number of other psychiatric syndromes and conditions, including generalized anxiety, depression, bereavement, and addictions.

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## 9.2 Protocols

The basic ART protocol is designed to address singular traumatic experiences, as well as more basic fears and phobias, such as fear of public speaking and fear of flying. It combines imaginal exposure (IE) with smooth-pursuit eye movements to rapidly facilitate desensitization, imagery rescripting (IR), and stress inoculation [3]. Like more widely studied therapies for PTSD—including eye movement desen-

sitization and reprocessing (EMDR), prolonged exposure (PE), and cognitive processing therapy (CPT)—ART relies on psychotherapy elements carrying an A-level recommendation in the 2010 Department of Defense and Veterans Affairs (DoD/VA) Clinical Practice Guidelines for PTSD [4]. The basic protocol is designed for discrete experiences and has the potential to resolve a traumatic event in a single session. Even particularly intense memories can be virtually disassembled and reorganized into a meaningful narrative in 1–5 sessions, with each session focusing on different scenes or concerns as they relate to the presenting problem.

The advanced protocol allows for a more detailed exploration of complex past events, unresolved developmental issues, and conflicted feelings, such as dreading the loss of a critically ill parent while simultaneously craving the relief one might expect at that parent's passing. It incorporates the use of metaphors and Gestalt techniques into the basic protocol, allowing deeper exploration of past experiences in relation to current affective and cognitive states. Rosenzweig describes these advanced techniques as ways to engage a patient's creative energies in more of a dreamlike state, where individuals are able to imagine and freely address thoughts, feelings, and sensations without the limitations of traditional talk therapies, and often in a less traumatic way [5].

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### 9.3 Procedure

The ART protocol begins with exposure and desensitization. The patient is asked to identify the targeted memory and provide a score on a Subjective Unit of Distress (SUD) scale. Discussion of the trauma may be as detailed or as brief as necessary to establish rapport while generating a moderate degree of somatic distress. The patient is given permission to share as many or as few details as desired about the event, making ART particularly useful for memories involving classified, criminal, or intensely disturbing material. Focusing internally on the targeted event, the patient evokes the images, sensations, cognitions, and emotions he or she initially recalled from the event, or those that were generated by the exposure process. Once desensitized, the patient is able to explore the traumatic content more deeply, often yielding impressive new understandings and insights.

Initial exposure begins with the patient visualizing the targeted event (referred to in ART as a *scene*) while simultaneously being guided by the therapist in sets of eye movements. The exposure and desensitization process typically lasts between 5 and 20 min. During this period, any distressing images, sensations, thoughts, or emotions are targeted with the protocol to reduce their intensity. Simple and less complex experiences may resolve quickly, while memories that are rooted in earlier experiences may require additional interventions to resolve.

One such intervention is known as the *scene match*. Scene match addresses an earlier event that evokes thoughts, feelings, sensations, or images that are similar or somehow related to the targeted event. Any distressing component of the earlier event that is evident during IE is addressed using the ART protocol until the individual can recall the details of the event without experiencing distress. The IE and

resolution of the patient's distress as related to the earlier scene is key to moving forward in the protocol.

The next procedural segment is called the *Director's Intervention*. The Director's Intervention accomplishes the critical process of rescripting the traumatic event. The procedure is directed by the therapist, but the new scene is self-selected by the patient, creating a very personalized resolution of the event. Rosenzweig calls this process "Voluntary Image Replacement," which refers to the imagining of a preferred, alternative version of the event in place of the original event [5]. This rescripting exercise allows patients to imagine themselves in a way that emphasizes a sense of mastery within or over the event. In other words, patients are able to metaphorically express their true wishes by visualizing a preferred scenario in place of the original targeted memory.

The subsequent procedural segment begins after the Director's Intervention, when the patient has finalized his or her preferred version of the targeted memory and is able to imagine the event differently while recalling the original narrative without distress. The images are changed while the actual memory of the event is retained in a narrative form. This segment starts with a test exposure to the original event (scene). Any remaining images, sensations, cognitions, or emotions are addressed until they are fully resolved, including scene matches to past or related events. The patient then processes future triggering events in a similar fashion. The emotions, sensations, images, and cognitions that arise when the patient visualizes future triggers are addressed using the same ART tools, permitting the patient to visualize positive but realistic outcomes.

The closing segment of a typical session includes a series of metaphorical interventions intended to help the patient completely resolve any lingering distress. The symbolic imagery evoked during this segment permits patients to visualize themselves taking charge of the past and consciously disposing of negative life experiences. The process helps generalize the resolution achieved during the session to previously untargeted stressors and traumatic memories. The patient often elects to bring significant individuals from their past or present life to a future in which they envision themselves no longer burdened by their present problem. This segment also provides a final opportunity for the therapist to identify lingering issues or alternatively for the patient to solidify a newfound sense of mastery over past traumas.

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## 9.4 Description Summary

Through the use of IE and IR, ART targets the original memory in its entirety and promotes resolution of the associated sensations, cognitions, images, and feelings within a singular period of reactivation. However, ART goes beyond basic exposure therapies by attaching more positive, empowering, self-directed images, sensations, feelings, and cognitions to the event within the reconsolidation window, which bench research suggests may contribute to lasting change [6, 7]. The event's original content and narrative remains intact, but without the affective valence previously assigned to it, and often with more detail than the patient was initially able to recall.

## 9.5 Current Evidence Base for ART

### 9.5.1 Funding History

As of this publication, there have been seven funded research efforts related to ART. Of these, two have been federally funded and the remaining five studies are from a range of funding sources. Three of the funded studies are completed and four are in progress, but manuscripts and scientific presentations are being developed across all studies. Solicitation for additional funded research is ongoing and includes federal, nonfederal, and foundation sources. Table 9.1 below summarizes the funded ART research studies including purpose, sponsor, and a brief description.

### 9.5.2 Completed Study Results

For the three completed studies of ART, two have resulted in a total of five peer-reviewed publications to date (four data based and one case report). In the first prospective cohort study to evaluate the efficacy and safety of ART as a brief treatment modality for symptoms of PTSD, a total of 80 adults aged 21–60 years with symptoms of PTSD (mostly civilians) were enrolled, of whom, 66 (82.5%) completed treatment and 54 of 66 (81.8%) provided 2-month follow-up data [1]. ART was delivered in a median of three treatment sessions. Mean scores pre- and post-ART and at 2-month follow-up were: PTSD checklist-civilian version (PCL-C): 54.5±12.2 versus 31.2±11.4 versus 30.0±12.4, Brief Symptom Inventory: 30.8±14.6 versus 10.1±10.8 versus 10.1±12.1, Center for Epidemiologic Studies Depression Scale (CES-D): 29.5±10.9 versus 11.8±11.1 versus 13.5±12.1, Trauma-Related Growth Inventory-Distress scale: 18.9±4.1 versus 7.4±5.9 versus 8.2±5.9 ( $p < 0.0001$  for all pre-ART versus post-ART and 2-month comparisons). No serious adverse events were reported. While this study did not include a control group, it provided empirical evidence of ART as a potential brief treatment modality for symptoms of PTSD and related comorbidities.

In a subgroup analysis of the above study, which consisted of 28 adults with high levels of comorbid symptoms of PTSD and major depressive disorder, subjects underwent a mean of 3.7 ART treatment sessions (range 1–5) [8]. For the 17-item PCL-C (PTSD checklist), the pre-ART mean score (standard deviation) was 62.5 (8.8) with mean changes of –29.6 (12.5), –30.1 (13.1), and –31.4 (14.04) at post-ART, 2-month, and 4-month follow-up, respectively ( $p \leq 0.0001$  for comparisons to pre-ART score). Compared to pre-ART status, this corresponded to standardized effect sizes of 2.37, 2.30, and 3.01, respectively. For the 20-item CES-D measure of depressive symptoms, the pre-ART mean was 35.1 (8.8) with mean changes of –20.6 (11.0), –18.1 (11.5), and –15.6 (14.4) at post-ART, 2-month, and 4-month follow-up, respectively ( $p < 0.0001$  compared to pre-ART score). This corresponded to standardized effect sizes of 1.88, 1.58, and 1.09, respectively. Strong correlations were observed at 2-month and 4-month follow-up for posttreatment changes in PTSD and depression symptom scores ( $r = 0.79$ ,  $r = 0.76$ , respectively,  $p \leq 0.0002$ ).

In the controlled trial of ART, 29 service members or veterans with symptoms of military PTSD were randomly assigned to receive ART, and 28 service members

**Table 9.1** Summary of the funded ART research studies

Title	Sponsor	Status	Population	Brief description
Accelerated resolution therapy (ART) for rapid resolution of symptoms of psychological trauma	Substance Abuse and Mental Health Services Administration	Completed	Adults (mostly civilians) with symptoms of PTSD ( $n=80$ )	Prospective cohort study to evaluate efficacy and safety of ART as a brief treatment modality for symptoms of PTSD
ART for psychological trauma	Telemedicine & Advanced Technology Research Center (TATRC)	Completed	US Service members and veterans with symptoms of PTSD ( $n=57$ )	Randomized controlled trial of ART versus an attention control (AC) regimen for treatment of symptoms of PTSD and related comorbidities, with 3-month follow-up evaluation
Psychophysiological assessment of PTSD before and after treatment with ART	Charles Stark Draper Laboratory	Completed	Adults (principally civilians) with diagnosed PTSD ( $n=13$ )	Pilot investigation that applied psychophysiological assessment before and after treatment with ART to a selected sample of civilians and veterans with PTSD
Pilot study of delivery of ART by Scottish registered nurses in mental health for treatment of military psychological trauma	University of South Florida and University of Stirling	Ongoing	Veterans of the British Armed Forces with symptoms of PTSD ( $n=24$ )	Prospective pilot study to evaluate efficacy and safety of ART as a brief treatment modality for symptoms of PTSD among British veterans
Use of ART for women veterans experiencing post-traumatic stress disorder (PTSD) secondary to military sexual trauma (MST)	University of South Florida	Ongoing	Female veterans with MST and symptoms of PTSD ( $n=10$ )	Pilot study to evaluate efficacy and safety of ART as a brief treatment modality for PTSD secondary to MST
ART for PTSD and sleep dysfunction	American Psychiatric Nurses Association	Ongoing	Veterans with symptoms of PTSD and sleep dysfunction ( $n=15$ )	Pilot study to examine efficacy of ART for treatment of symptoms of comorbid PTSD and sleep disturbance
Prospective cohort study of ART for treatment of military psychological trauma	Chris T. Sullivan Foundation	Ongoing	Service members and veterans with symptoms of PTSD ( $n=200$ )	Prospective cohort study ( $n=200$ ) to evaluate efficacy and cost-effectiveness of ART for treatment of symptoms of PTSD, with oversampling of MST and refractory PTSD

or veterans were assigned to an attention control (AC) regimen that consisted of two sessions of either fitness counseling or career counseling [2]. After random assignment, those assigned to the AC regimen were offered crossover to ART, with 3-month follow-up on all subjects. Mean age was  $41 \pm 13$  years with 19% female, 54% Army, and 68% with prior PTSD treatment. The ART was delivered in  $3.7 \pm 1.1$  sessions with a 94% completion rate. Mean reductions in symptoms of PTSD, depression, anxiety, and trauma-related guilt were significantly greater ( $p < 0.001$ ) with ART compared to AC. Favorable results for those treated with ART persisted at 3 months, including reduction in aggression ( $p < 0.0001$ ). Adverse treatment-related events were rare and not serious. This trial provided controlled evidence indicating that ART is a brief, safe, and effective treatment for symptoms of combat-related PTSD, including refractory PTSD.

In a secondary analysis of the above-described controlled trial of ART, type and magnitude of comorbid pain was assessed among 45 service members/veterans with symptoms of combat-related PTSD (24 assigned to ART and 21 assigned to the AC regimen) [9]. Mean age was 41.0 years, 20% were female, and most subjects (93%) reported at least some level of current pain. The majority (78%) used descriptive terms indicative of neuropathic pain, with 29% reporting symptoms of a concussion or feeling dazed. Mean pre-/post-change (standard deviation) on the pain outcomes questionnaire (POQ) was  $-16.9$  (16.6) in the ART group versus  $-0.79$  (14.2) in the AC group ( $p = 0.0006$ ). Among POQ subscales, significant treatment effects with ART were reported for pain intensity (effect size = 1.81,  $p = 0.006$ ), pain-related impairment in mobility (effect size = 0.69,  $p = 0.01$ ), and negative affect (effect size = 1.01,  $p = 0.001$ ). This secondary analysis provided controlled evidence of ART being able to acutely reduce concomitant pain among service members and veterans treated for symptoms of combat-related PTSD.

### 9.5.3 Ancillary Analyses (in Progress)

As listed in Table 9.1, there are multiple studies of ART in progress in addition to further analyses of existing data. At present, data collection and results are being compiled for future dissemination of the following outcomes in relation to treatment with ART for symptoms of PTSD:

- Comparison of pre- versus posttreatment response for psychophysiological measures of heart rate, skin conductance, and pupil diameter.
- Comparison of pre- versus posttreatment response for neuromarkers of sleep quality including electroencephalogram (EEG) measures of coherence and sleep fragmentation. In addition, actigraphy measures of sleep quality are being collected and will be reported in future publications.
- Assessment of ART treatment response in key military sample subgroups, including those with a history of military sexual trauma (MST), refractory PTSD, as well as handedness (strongly right, strongly left, mixed).
- Cost effectiveness analysis of ART versus current first-line evidence-based treatment for PTSD, including PE therapy.

## **9.6 Case 1**

### **9.6.1 Presentation and History**

The patient was a 44-year-old former Army E-6 infantryman who had completed one combat tour in Afghanistan in 2004, during which he was exposed to numerous battlefield traumas. He had never been seen before by behavioral health, citing concerns about stigma. At the time of evaluation, he was employed as a tattoo artist and lived with his wife, an active duty Army soldier. They had no children. The patient was referred for ART by his treating psychiatry resident.

### **9.6.2 Diagnosis and Assessment**

The patient presented with classic signs and symptoms of PTSD: nightmares; intense physiological and psychological distress upon exposure to reminders of trauma; efforts to avoid people, places, and conversations reminding him of trauma; persistent self-blame about the loss of one of his soldiers; a persistently negative emotional state; a persistent inability to feel positive emotions; frequent angry outbursts; hypervigilance, exaggerated startle response; and extreme sleep problems.

On mental status examination, he appeared older than his actual age and wore casual attire that revealed extensive tattoos on all exposed skin except for his face. His muscles were tense, especially those in his jaw, and he appeared tired and agitated. However, his eye contact was good and he was polite and expressed motivation for treatment. He denied recent suicidal or homicidal ideation and had no history of suicide attempts.

### **9.6.3 Treatment and Management**

The patient underwent a total of four ART sessions during a 5-week period. A summary of each session is as follows:

#### **9.6.3.1 Session 1**

The patient's pre-session PCL-C score was 72. A score of 50 is generally accepted as the cutoff, predicting PTSD with a sensitivity of 82% and a specificity of 83% [10]. He rated his anxiety at the start of the session as a 9 on a 1–10 SUD scale. He identified "guilty" as the prominent emotion he was feeling. He elected to process a combat scene in which he had been leading an allied patrol ordered to search a building for a "high value" enemy target. He had sent six squad members around to the rear of the building and had approached the front of the building with a seventh soldier. As the soldier stepped forward into the building, the patient had a bad feeling. When he tried to pull his comrade back, the latter was shot in the neck from above and died instantly.

While picturing this scene during the initial desensitization process, the patient became visibly upset. He was crying and breathing heavily, and at one point even shouted out loudly. In accordance with the basic ART protocol, the therapist then shifted the patient's attention to his bodily sensations, including muscle tightness, a "pounding" heart, a clenched jaw, and a feeling of "adrenalin" in his chest and hands. Following some basic instructions and sets of eye movements, the patient looked and reported feeling "calm."

**Pearl** A unique and critical aspect of ART is the requirement to extinguish strong physical sensations before pressing forward with processing a difficult scene. The therapist directs the patient's attention to either sensations or the scene in an alternating fashion, maintaining the patient's exposure to traumatic recollections at a tolerable level while minimizing distress.

The patient rescripted this scene by visualizing all of his squadmates enjoying a relaxing time at a "beautiful oasis" that included palm trees, a beach, and lawn chairs. To further inoculate himself against his typical triggers (e.g., facing his agitated wife after a long day at work), he also envisioned himself driving home and seeing his squad at the oasis, then arriving home calm and in a good mood. His SUD score at the end of session # 1 was 3 out of 10.

### 9.6.3.2 Session 2 (14 Days after First Session)

The patient's pre-session PCL-C score was 62. He identified "anger" as his prominent emotion and elected to process a recent intense argument with his wife, after which he had smashed his head through their bathroom door.

With the therapist's assistance, the patient successfully eliminated muscle tightness from his back, chest, and shoulders, replacing it with a sense of "calmness and relaxation." During the rescripting process, he chose to maintain the setting of the argument scene, but replaced the screaming match with a regular conversation. He saw himself using positive self-talk to stay calm and rational when his wife made accusations against him. No argument ensued; they took a shower together, made breakfast, and went shopping as they had planned. The patient reinforced this image by seeing it twice, then envisioned future interactions with his wife as being much more positive. He appeared very relaxed and reported feeling "pretty calm" at the end of the session. A SUD score was not elicited.

### 9.6.3.3 Session 3 (21 Days after First Session)

The patient's pre-session PCL-C score was 55, and he again identified "anger" as his prominent emotion at the start of the session. He elected to process another combat scene.

The scene involved a vehicle-borne improvised explosive device (VBIED) that was detonated by the vehicle's driver at a checkpoint in Afghanistan. The patient reported that "car parts and shrapnel went everywhere," and as the dust cleared, he

encountered a young boy with a dark complexion who appeared to be dead but also seemed to be mouthing the word “Mama.”

In changing the scene, the patient took control of the situation, sending his squad out to investigate the vehicle well outside of the gate, where they apprehended the driver before he could detonate himself. He also included women and children in his new scene. His squad mates moved them aside to a safe location and the young boy clung securely to his mother’s skirt.

As commonly happens, image and sensory fragments or “crumbs” of the initial scene remained vivid. The patient had two crumbs during this session—the approaching vehicle and the dying child. He replaced the image of the vehicle with that of an American convoy and attempted to replace the child’s image with a smiley face and the words “have a nice day.” However, this somehow seemed insufficient, so he used another set of eye movements to give the child legs and see him standing confidently on the side of the road. An SUD score was not elicited.

**Pearl** This is an excellent example of how the most powerfully rescripted scenes involve the patient self-directing an alternative scenario and essentially “fixing” the problem as opposed to just putting a bandage (or in this case, a smiley face) over it. The patient applied this solution to future triggers by seeing himself walking around the ethnic neighborhood near his work studio without feeling anxious, and realizing that the dark-complected children who liked to wander into his tattoo parlor were not dangerous and were “just looking for candy.”

#### 9.6.3.4 Session 4 (37 Days after First Session)

The patient decided to process a scene involving childhood sexual abuse for his fourth ART session. He had suspected it would be his most difficult scene, and his presession PCL-C score of 77 reflected this anticipatory anxiety. He rated his distress at the start of the session as a 7 out of 10 on the SUD scale and identified “distrustful,” “confused,” and “powerless” as the emotions he experienced when thinking about the event.

The patient elected to share very little about the scene, only disclosing that his head was being forced into a pillow. He became quite tearful, experiencing tightness and “sadness” in his chest, pain in the back of his head, jaw tightness, and a feeling of “disgust” throughout his body. These sensations and feelings were decreased to a tolerable level using several sets of eye movements, which nearly eliminated all discomfort except the jaw tightness. At the therapist’s suggestion, the patient was able to resolve this remaining sensation by using a metaphorical needle “with relaxing medicine in it” to help relax his jaw, and this relaxation persisted throughout the remainder of the session.

**Pearl** Suggestions, such as the one mentioned above, are a critical component of ART; they stimulate creativity and widen the breadth of solutions available to a patient. The therapist will typically provide one or two suggestions at a time, always ending with the phrase “or anything else you like,” to emphasize the patient’s control over the therapeutic process.

While envisioning his original trauma a second time, the patient realized that he had never told anyone about the abuse because the perpetrator had threatened to kill his mother and sister if he did so. This insight appeared to bring him significant relief. Later, the therapist used a Gestalt-style technique to ascertain if the patient had anything to say to his younger self, and the patient calmly related, “I told him I understand now.” His SUD score at the end of the session was 2.5 and he reported feeling “calm.”

### **9.6.4 Outcomes and Case Resolution**

Shortly after session 4, the patient left his wife, moved halfway across the country, and was essentially lost to follow-up. However, 5 months after his first ART session, he emailed his therapist an update. He had been through a difficult time with his wife and their marriage was essentially over, but the patient was doing well. He wrote:

On a brighter note, I am hanging in there. I have had ZERO PTSD issues since I arrived [here]. Even when [my wife] was screaming at me, hitting me, pushing me down a flight of stairs, and mocking me for attempting to get healthy... I stuck to the tools I was taught and maintained myself. Even as she was lying about me in court and on post, I maintained my behavioral health progress. I've had no PTSD incidents with my family or friends as well. I'm not saying it has been easy. I work hard every single day to avoid my triggers and stay positive no matter what is/has been thrown at me. I weaned myself off the meds [the psychiatry resident] prescribed about three weeks ago...I have had some minor issues sleeping but nothing I haven't been able to overcome.... Anyhow, I am alive and well. My life has been a complete nightmare until recently but I am persevering, surrounding myself with only healthy people, and staying optimistic.

He agreed to complete and return a final PCL-C inventory. His score was 26.

## **9.7 Case 2**

### **9.7.1 Presentation and History**

The patient was a 38-year-old married, mixed ethnicity male marine corps officer with 19 years' time in service (including 12 years of duty as an enlisted marine). He had heard about ART five months earlier while participating in a 28-day residential treatment program for alcohol dependence. However, treatment with ART had been deferred to maximize his participation in other planned therapies, beginning in the residential treatment program and continuing through a four-week partial hospitalization program, a three-week comprehensive traumatic brain injury (TBI) evaluation program, and intermittent weeks of individual outpatient therapy.

### **9.7.2 Diagnosis and Assessment**

The patient's PTSD symptoms began as impatience and anger that emerged as he was recovering from a severe rocket injury to his left forearm three and a half years

prior to evaluation. Over time, his symptoms developed into the full-blown PTSD syndrome, including intrusive memories of various combat traumas and traumatic losses, psychological distress upon exposure to reminders of these events, active avoidance of triggers, inappropriate self-blame, a sense of disconnection from family, irritability, difficulty sleeping, exaggerated startle response, and hypervigilance. He was also diagnosed with alcohol use disorder and mild TBI, but had been sober for more than five months at the time of his ART intake and was performing adequately in his job as a military school faculty member.

### 9.7.3 Treatment and Management

The patient had no formal behavioral health treatment until he self-referred for alcohol rehabilitation. During the ensuing five months, he participated in various substance abuse and trauma-focused treatments, including individual supportive therapy and EMDR, as well as group-based psychoeducation, peer support, relapse prevention, and graphic narrative therapies. Upon initial evaluation for ART, he expressed motivation to participate, but felt he had worked through most of his PTSD issues except for disrupted sleep and profound guilt regarding one of his marines who was severely wounded after the patient left theater. His PCL-5 score was 5. He rated his level of distress as a 1 on a 1–10 SUD scale.

#### 9.7.3.1 Session 1

The patient chose to process a scene in which he hosted this marine—now a medically retired double amputee—at a marine corps ball. The feelings he identified at the start of the session were “shameful,” “anxious,” “insecure,” and “confused.” While thinking about this event, the patient reported having a slight headache and pain in the area of his injured left forearm. The therapist helped the patient eliminate both sensations successfully using the basic ART protocol.

As the patient “saw” his scene the first time, he reported feeling pain in his sternal area. With eye movements, this pain “moved up to the back of [his] throat.” When subsequent sets of eye movements failed to decrease this sensation any further, the therapist performed a scene match.

**Pearl** Scene match is a powerful ART tool that permits rapid access to earlier life memories which may be contributing to present-day feelings and sensations. Using eye movements, the therapist helps the patient look back at his or her earlier life for another event in which that same sensation(s) may have occurred.

Following the scene match, the patient responded, “I’m feeling like I felt many times as a child, like I did something wrong.” He then related a childhood scene in which his father came home, hit his mother, then broke a mirror over her head while the patient and his brother sat on the stairs, watching.

**Pearl** This example highlights the rapid speed with which ART can help connect and address early childhood memories that may be at the core of the more recent distressing experience. The patient recalled this childhood event within minutes of starting his first ART session with a new therapist.

The therapist then switched from processing the initial scene involving the double amputee to this nested childhood scene. When the sensation in the patient's throat persisted further, the therapist asked the patient if he could envision a metaphor to describe the feeling.

Therapist: "What does the pain in the back of your throat feel like? Can you think of a metaphor to describe it?"

Patient: "It feels like a cloud of smoke."

Therapist: "O.K. Picture that cloud of smoke and I want you to see if you can come up with a solution to get rid of it while you follow my hand with your eyes. Maybe you can blow it out, vacuum it out, or maybe someone can help you. I don't know. You can use my suggestions or anything else you like. Here we go."

Patient (after a set of eye movements): "I tried to grab it and pull it out, but it got stronger... more intense."

Therapist: "No problem. Maybe you need a tool or device to help you get it out of there. See if you can find a tool to help you remove it."

Patient (after another set of eye movements): "I put a chain around it and hooked it up to a van. It came partly out."

Therapist: "Good! It's moving! Let's see if you can get it completely out."

Patient (after another set of eye movements): "It's stubborn. It's still stuck to my lips."

Therapist: "Maybe you need someone to help you. Maybe the cloud is someone who has control over you and doesn't want to let you go. See what you can do to take care of this."

**Pearl** The therapist has suggested to the patient that the sensation may represent something deeper—a connection to a figure from the past. ART is unique in its ability to permit this testing of interpretations so quickly in the therapeutic relationship. Notice also that the therapist phrased the suggestion in the form of a hypothesis, allowing the patient to maintain full control over whether or not to accept or reject it, allowing for a self-directed solution that promotes a sense of mastery.

Patient (after another set of eye movements): "It was my dad; he tried to push it back in my throat. I used a machete to hack him up, but he just kept laughing, so I used a baseball bat to beat him but he just kept laughing. Finally I gave him a hug and told him I loved him and he went away."

**Pearl** Consider the rich psychodynamic material that emerged from this simple exploration of a bodily sensation. The use of metaphor and imagery helped the patient simultaneously express and resolve persistent and even conflicting feelings without a lengthy analysis. The therapist now has the option to explore many more hypotheses about the patient's primitive drives, traumatic experiences, and primary attachments if he or she deems it appropriate.

Having helped the patient resolve this sensation, the therapist returned to the nested domestic violence scene. In reviewing this scene, the patient reported feeling pain in his chest again, which he described as feeling “like an old wooden vise.”

Therapist: “Let’s see if you can get rid of that pain like you did with the pain in your throat.”

Patient (after another set of eye movements): “It’s partly reduced.”

Therapist: “Do you need help?”

Patient: “No.”

Patient (after another set of eye movements): “It’s almost gone.”

Therapist: “Great! Go ahead and open that vise up wide.”

Patient (after another set of eye movements): “The pain is gone.”

**Pearl** Once patients learn how to use the eye movements to process bodily sensations, they are often able to rapidly eliminate pain, tightness, and other discomfort.

The therapist then instructed the patient to see his childhood scene a second time.

Patient: “This time I noticed that my mom had tried to hold open the front door. I also realized I had my feet between the railings because I could see my hands and feet and realized how small they were.”

As is commonly found with the second viewing of the traumatic scene, the patient reported no additional physical sensations and appeared to be in no distress. He was then directed through the rescripting process.

Patient: “My dad came in smiling. He gave my mom a hug and a kiss and said ‘hi’ to me and my brother. Mom went into the kitchen to get dinner out of the oven. Dad gave her a friendly swat on the behind and we all laughed.”

**Pearl** The ART protocol allows patients to envision preferred scenarios that often resolve unmet needs from early childhood. The virtual fulfillment of these needs changes the emotional valence they attach to the original scene, thereby reducing present-day distress. Research and anecdotal experience to date suggests that ART patients will retain the narrative memory of their original scenes and could report these events in detail if asked to do so, but they will no longer be burdened by the negative emotions formerly associated with them.

When asked to see the new scene again to reinforce it, the patient reported that he now saw *himself* coming through the door as an adult, giving his wife a big hug and hugging his kids. He stated that he could not wait to go home and hug his family.

**Pearl** This example nicely demonstrates the generalizability of insights developed during ART. On presentation, one of the patient’s chief complaints was the fact that he did not feel close to his kids. Having now “seen” both his father and himself modeling affectionate paternalistic behavior, the patient can now imagine himself interacting with his children in a positive, more nurturing way.

The therapist then directed the patient back to the original scene involving him escorting his double-amputee marine comrade at the ball. The patient started seeing his scene without difficulty, but got “stuck” at the point where his buddy had asked for a chair to use in the shower and the true realization of his disability struck the patient for the first time.

Patient: "It feels like there's a thumb on my heart."

Therapist: "See what you can do to remove that sensation."

Patient (after another set of eye movements): "The thumb is gone, but now there are fingers there."

Therapist: "Do the fingers feel good or bad?"

Patient: "They feel good."

Therapist: "See if you can spread the sense of security afforded by the fingers throughout your whole body."

Therapist (after another set of eye movements): "Were you able to spread that sense of security?"

Patient: "Yes."

The patient finished his scene, saw it a second time, then rescripted it to a scene in which he and his buddy (the latter on prosthetic legs) were each running the Marine Corps Marathon independently but kept bumping into one another along the way. At the end, his buddy raced ahead, beating the patient to the finish line. The therapist asked the patient if his buddy had anything to say to him after they finished the race. After a set of eye movements, the patient reported that his friend had told him, "I'm alright [patient's name], I'm alright." The patient then felt a pleasant, warm sensation, which the therapist helped him spread throughout his body.

**Pearl** This vignette highlights the use of a Gestalt-style technique to enhance the basic ART protocol, which can be particularly useful for patients struggling with grief and bereavement. While following the protocol, patients are often able to "see" earlier or better versions of themselves, as well as to "hear" positive interactions between themselves and others.

The therapist then directed the patient to see himself during a future event that would have been stressful before ART, and to make this scene as positive as possible. The patient saw himself meeting his fellow marine at the next Tunnel to Towers run in New York City. Instead of awkwardly shaking his hand as he would have done previously, he hugged his buddy and told him that he loved him. The marine hugged him back and said the same.

At the end of the first session, the patient's SUD score was "a solid zero" and he reported that his initial feelings of shamefulness, anxiety, insecurity, and confusion were gone.

#### 9.7.4 Outcomes and Case Resolution

Seven weeks after his initial ART session, the patient reported that his guilt regarding his marine buddy was significantly reduced. He stated, "I don't think about it much... I have no real feelings about it... I look at my relationship with [that Marine] just like the relationship I have with the rest of my Marines." The PCL-5 was not repeated due to his low initial score. Overall, he was doing very well. He had remained sober, he and his wife were in the process of purchasing a house, his relationship with his children had improved, and he was very hopeful about the future.

## 9.8 Conclusion

ART constitutes an efficient and effective therapy for PTSD that packages A-level psychotherapy elements in a novel format. Capitalizing on the memory reconsolidation window, the experienced ART therapist can eliminate negative images and sensations, while helping the patient rescript distressing memories and positively envision future events. Meanwhile, the patient remains in control—alert, aware, and at liberty to share as many or as few details of the experience as he or she deems comfortable.

Although research on ART to date has been limited, the number of trained ART therapists in the DoD community is growing. Interest in research to explore and further validate ART's clinical utility is also expanding. Future clinical trials are planned to evaluate the effectiveness of ART as compared to established trauma therapies, and researchers are also hoping to investigate the use of ART in specific clinical populations, such as victims of MST, first responders, patients with TBI, and children and adolescents. It will also be important to explore potential contraindications and the risk of adverse effects. However, should future research efforts yield results as promising as those that have been published to date, ART could one day become the preferred PTSD therapy for combat veterans.

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