

**Table: Using Symptoms and Neurobiology in Considering Treatment Practices\***

<b>Challenges/Symptom Clusters</b>	<b>The Neurobiology</b>	<b>Strategies</b>	<b>A Few Corresponding Practices*</b>
Post-deployment stress effects (in general)	The amygdala (primitive, unconscious emotional memory) is calling the shots	Learn to contact and enlist the help of the higher brain, including the prefrontal cortex (reason, logic, calm), the anterior cingulate gyrus (relationship), and the hippocampus (conscious memory)	Grounding in safety, Mindfulness training, cognitive/ behavioral skill training, affirmations (Siegal, 2007)
	Key higher brain structures (e.g., prefrontal cortex) are nurtured and activated through bonding and face-to-face contact (Schoore, 2001)	Constructive face-to-face contact with trustworthy people	Building the therapeutic relationship, connecting with other veterans, harmonizing relationships with family and friends
	The amygdala is primarily concrete, and unable to grasp the more abstract kinds of thoughts and instructions that our logic would have us use in the healing process	Add concrete elements (images of shapes, sizes, sounds, smells, motion, etc.) to calming and safety instructions, and to skill building around stress and memories (always monitored and controlled)	Guided imagery (using the veteran's own chosen images), building a "safe place" in the imagination, placing traumatic information in a visualized "container," to maintain control, EMDR, careful use of somatic practices (Ferenz, 2008)
Fear, anxiety, irritation, anger, rage, sleeplessness, racing thoughts	The body has learned to respond to stress with hyperarousal of sympathetic processes and chemicals, and lacks enough GABA to promote calm or serotonin to help control impulses	Learn/practice ways of recognizing and labeling emotions, calming emotions, and slowing down in a controlled setting; clinician monitors arousal and provides coaching and support for the calming process	Grounding in safety, EMDR, self-soothing, Mindfulness, anger management, cognitive/behavioral therapy, careful use of exposure (extra care in cases of DESNOS) (van der Kolk & Pelkovitz, 1999)
Responding to stress by "shutting down," numbing, avoidance, dissociation	The body has learned to respond to rising stress with parasympathetic chemicals, to avoid hyperarousal and maintain safety	Recognize this as a safety measure, improve motivation, develop concrete grounding in safety that will allow the veteran to take gradual steps toward recognizing and breaking out of dissociative patterns	Motivational interviewing, self-monitoring skills training, Mindfulness, careful use of somatic practices, great care in considering exposure therapy (which might bring on hyperarousal) (Danenburg, 1999)
Exhaustion, hopelessness, sense of helplessness, lack of arousal, depression, risk taking just to get some stimulation	Parasympathetic chemicals (especially cortisol) are too active, sympathetic processes are worn out, serotonin levels are too low	Balance the stress system to gradually reintroduce sympathetic chemicals, promote clear thinking and higher serotonin levels, promote impulse control	Somatic practices, cognitive/behavioral therapy, Mindfulness, art therapy, music therapy, affirmations; focus on building appreciation, gratitude, and hope
Intrusive memories, images, sounds, smells, feelings, etc., flashbacks, confusion between past and present events	Amygdala is bringing up fragments of unconscious traumatic memory, without any grounding in time or space from conscious narrative memories in the hippocampus	Safety measures and reminders for use during flashbacks and intrusive memories	Cue cards, self-soothing skills training, visualization, establishing a "safe place"
		Skills for distinguishing past from present and re-grounding in the "here and now"	Mindfulness, Focusing, cognitive skills training, visualization, art therapy
		Learn to integrate those memories with conscious narrative memories in the hippocampus	EMDR, listening to the veteran's narrative (with grounding in safety), careful use of exposure therapy (Ferenz, 2008)
Substance abuse or dependence	Alcohol or other drugs have served as self-medication, and (if dependent) convinced the brain they are necessary to survival	Keep trauma symptoms in mind in decisions to withdraw from alcohol/drugs. Allow the brain to stabilize in the absence of these substances	Motivational interviewing, motivational incentives, cognitive/behavioral therapy, SUD recovery-based approaches
Self-defeating thoughts	Prefrontal cortex is underactive, amygdala is influencing thoughts	Learn to question and replace self-defeating thoughts with constructive ones	Cognitive skills training, Mindfulness training, affirmations (Siegal, 2007)
Somatic conditions (e.g., unexplained tics, pains, numbness, tremors, etc.)	Energy of the freeze response is trapped in procedural memory in the brain	Release the stored energy through attention to the body, particularly in affected areas	Firm establishment of safety, followed by carefully used somatosensory practices
DESNOS symptoms (e.g., impulsivity, dependency, suicidal thoughts, delusions, rage, paranoia)	Amygdala is running the show, prefrontal cortex is underactive, development has been compromised	Provide safety, structure, clear boundaries, education/training in management of thoughts and emotions, focus on the present	Dialectical Behavioral Therapy (DBT), using EMDR only in later stages of recovery

\*These are practices you might look into. Their inclusion on this page does not constitute a recommendation of their use, in general, or with specific clients. No one should use any of these practices without: 1) a clear understanding of their uses and the evidence behind them and 2) ample training and (if required) licensing in the specific practice.