

PTSD & The Brain: How TM can help

by [Gary P. Kaplan MDPhD](#) on September 28, 2014

Now more than ever we are aware of the impact of [post-traumatic stress disorder \(PTSD\)](#) on veterans returning from the front lines of wars in the Middle East, raging for the last ten years. Not only are veterans suffering from PTSD, but millions of people around the world are victims of wars, terrorism, violence and sexual abuse. They are stressed and chronically debilitated by these highly traumatic events.

PTSD is a hidden wound of these horrible events, crippling individuals, families and communities who are struggling to emerge from the dark clouds of violence and destruction. Victims of violence and war often suffer unimaginable trauma for years, unable to find a remedy for their anguish.

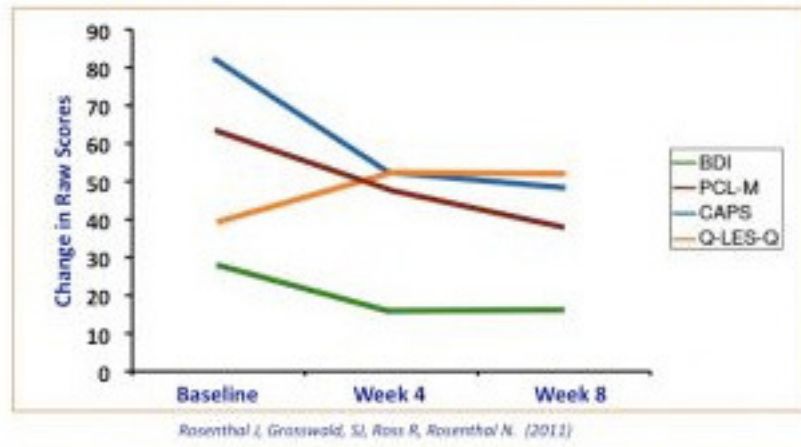
PTSD is characterized by repeated re-experience of traumatic events, avoidance symptoms, including reluctance to think or talk about the trauma, and excessive arousal symptoms, including poor sleep and poor concentration. These people often respond poorly to traditional treatment with drugs aimed at adjusting levels of brain neurotransmitters which in part mediate the abnormal response to stress.

What is the biologic basis of this disorder? Though all of the puzzle pieces have not yet been put together, we do know that certain parts of the brain responsible for explicit memory (i.e. the verbal memory of the event) and emotional reaction do not function normally in people afflicted with PTSD.

1. The gateway of memory, the hippocampus, located near the undersurface of the brain, is reduced in size in many PTSD patients, apparently because of the negative effect of stress hormones on the nerve cells that make up this structure. The result is memory impairment and amnesia for some events.
2. A neighboring structure, the amygdala, is abnormally activated in PTSD. The amygdala infuses memories with strong emotion, and its excessive activity can trigger anger and rage reactions.
3. The prefrontal cortex, the seat of judgment and planning, thought to act as a counterbalance to the impulsive amygdala, is also negatively affected in PTSD.

PTSD has traditionally been treated like other anxiety disorders characterized by episodic flare-ups, which are incapacitating. Drugs aimed at treating both anxiety and depression are utilized, as are behavioral therapies, all with limited success.

EFFECTS OF TM ON OEF/OIF VETERANS WITH PTSD



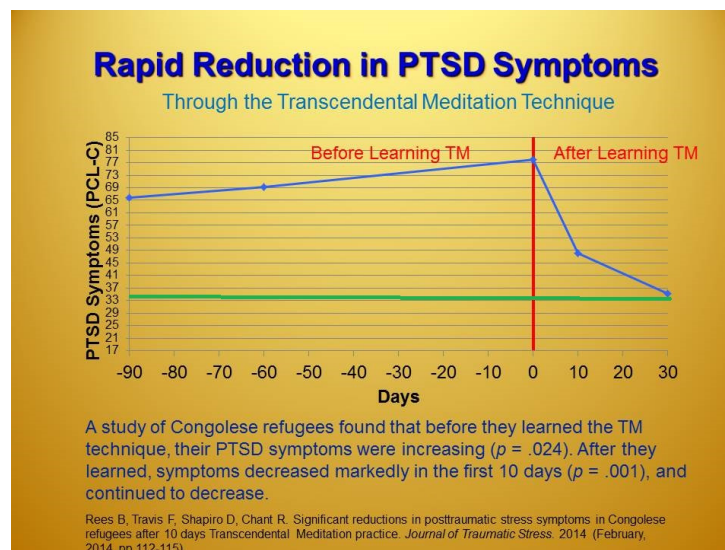
By the fourth week of practicing TM, OEF/OIF veterans with PTSD experienced dramatic reductions in PTSD symptoms according to the Clinically-Administered PTSD Scale (the gold standard of PTSD testing). They also reported decreased depression and improved quality of life—showing a greater ability to return to their lives after the war. These findings replicated an earlier study examining TM as a treatment for Vietnam veterans with PTSD.

A [pilot study in 2001 showing a 50% reduction in PTSD symptoms](#) in veterans practicing [Transcendental Meditation](#) was welcome news, and not unexpected. After all, it fits with what we know about TM and how it affects the brain. During TM, the [EEG changes](#) reflect prefrontal cortical activity naturally and effortlessly increasing in power in a coherent manner. More recently, the powerful effect of TM in reducing post-traumatic stress symptoms was demonstrated in Congolese refugees, who showed a dramatic reduction in symptoms within only ten days of starting the TM technique.

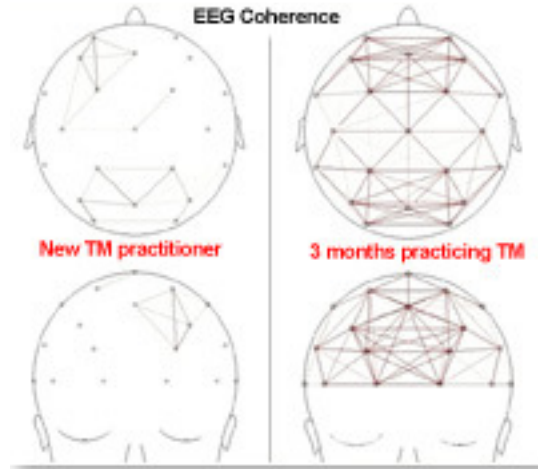
<http://onlinelibrary.wiley.com/doi/10.1002/jts.21883/abstract>

In this group of refugees, 90% became non-symptomatic within just 30 days of learning TM.

<http://www.ptsdreliefnow.org/the-research.html>



The state of [restful alertness during TM](#) is exactly the opposite of what we see with amygdala over-activity. And, we see these EEG changes during TM even in new meditators, so a few weeks or months of practice can be expected to significantly reduce the negative impact of repeated episodes of emotion-laden memories. The memories are not erased, but they are less likely to overwhelm, as this new style of a more coherent cortical functioning is established in the brain of someone practicing TM twice a day.



What a great addition this is to the arsenal of physicians treating these wounded warriors, and also non-veterans who have been affected by [PTSD](#) and anxiety disorders. We must all work to make it available to those in need.