

**THE EFFECTS OF THE TRANSCENDENTAL MEDITATION TECHNIQUE ON  
POST-TRAUMATIC STRESS DISORDER: A SUMMARY\***

*Presented by*

TM for Veterans

Operation Warrior Wellness  
A Division of the David Lynch Foundation

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# The Effects of the Transcendental Meditation Technique on PTSD

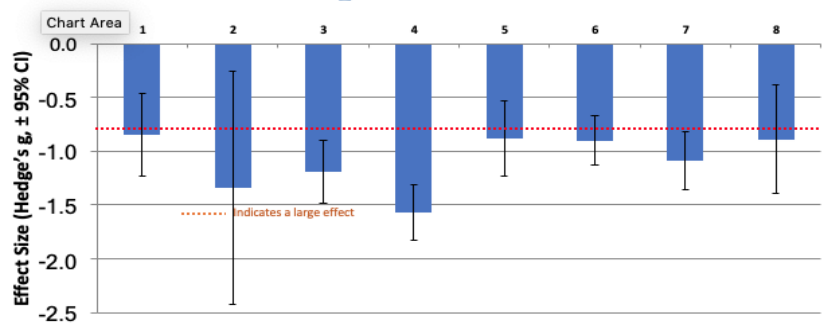
Post-Traumatic Stress Disorder (PTSD) is a serious and disabling condition that affects approximately 6% to 7% of adults in the U.S. over their lifespan.<sup>1</sup> The incidence is at least two to three times greater in veterans and active duty personnel who have seen combat.<sup>2-3</sup> PTSD is associated with co-morbidities such as major depression, substance abuse, suicide, and poor physical health.<sup>4-6</sup> It is widely recognized that current pharmacological and psychotherapeutic approaches to treating PTSD are not fully adequate, because of limitations in both effectiveness and acceptability to patients.<sup>7</sup> As a consequence, there is an acknowledged need to identify new approaches to treating PTSD that are both effective and acceptable.

Transcendental Meditation® (TM) is a simple, natural, easily-learned mental technique that is practiced twice daily sitting comfortably in a chair. It has been extensively researched and learned by millions of Americans. TM is not a philosophy or a religion and requires no belief or change in lifestyle. The more than 420 peer-reviewed studies conducted on TM over the last 50 years have demonstrated that it is effective at treating stress-related conditions, such as hypertension, anxiety, and depression, as well as enhancing mental and physical health and cognitive function.<sup>8,9</sup> Studies on physiological outcomes have shown that the effects of TM are opposite those produced by stress and the fight-or-flight response.<sup>10,11</sup> Psychological research on TM indicates effects counter to the twenty DSM-5 symptoms associated with PTSD.<sup>12-27</sup> No adverse effects have been reported in three published reviews of the TM research.<sup>28-30</sup>

The first study on TM and PTSD, a randomized controlled pilot trial on Vietnam War veterans conducted in the early 1980s, found significant improvement compared to controls undergoing individual psychotherapy in PTSD symptoms and a range of comorbidities, including depression, anxiety, insomnia and alcohol use.<sup>31</sup> In recent years, additional studies have been conducted, including a major study funded by the U.S. Department of Defense and published in *Lancet Psychiatry*.<sup>32</sup> As of spring 2019, there are 14 studies on the effects of TM on PTSD symptoms: 11 peer-reviewed and three non-peer-reviewed studies. Nine of these are on veterans and active military. Four studies with veterans are randomized controlled trials (RCTs) and two with civilians are RCTs. All the studies found that TM had large effect sizes in reducing PTSD symptoms. This finding was consistent across study design, PTSD population, and researcher affiliations. (See Appendix 1 for study design and outcomes of all studies.)

Figure 1 presents the within-group effect sizes of the eight veteran studies for which effect

## Reduced Symptoms of PTSD by TM in Veteran Populations: Effect Sizes



1) Brooks, 1985; 2) Rosenthal, 2011; 3) Hefner, 2014; 4) Herron, 2016; 5) Chapin, 2016; 6) Kang, 2018; 7) Nidich, 2018; 8) Bellehosen, 2019

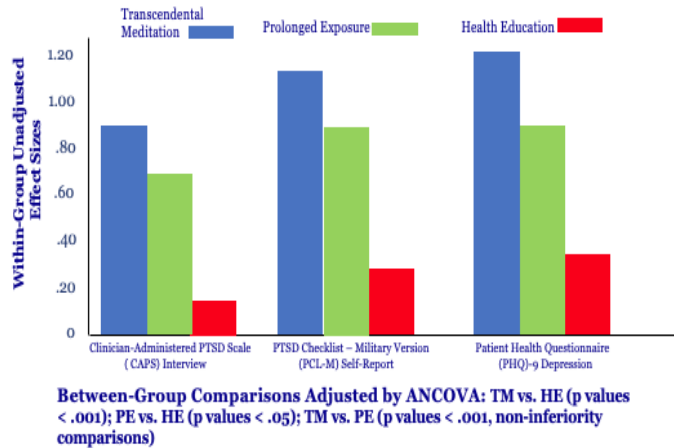
**Figure 1: Effect Sizes of Studies on TM and PTSD in Veteran Populations**

**Note:** Effect size in statistics provides a quantitative measure of the magnitude (or effect) of a treatment. An effect size of .2 is considered small, .5 medium, and .8 or greater large.

size was calculated. These effect sizes are comparable to those produced by Prolonged Exposure and Cognitive Processing Therapy reported by Steenkamp in her review of psychotherapy for military-related PTSD (Cohen *d* range, 0.78-1.10).<sup>7</sup>

The largest of the TM PTSD studies to date, Nidich (2018),<sup>32</sup> was a non-inferiority trial, designed to assess directly whether TM was non-inferior to Prolonged Exposure (PE), considered the “gold-standard” therapy for treating PTSD. Both TM and PE were compared to an active Health Education (HE) treatment. The study randomly assigned 203 veterans with clinical PTSD (CAPS score > 45) to either Transcendental Meditation (N=68), PE (N=68), or HE (N=67). Each treatment provided 12 sessions, 90 minutes each over 12 weeks, with daily home practice. Figure 2 shows the results for PTSD symptoms and depression. All 202 eligible patients randomly assigned to treatment were included in the intent-to treat analyses regardless of treatment dropout or missing post-test data. The study found that both TM and PE were significantly more effective than HE. TM was significantly non-inferior to PE for CAPS (Clinician Assisted PTSD Scale), PCL-M (PTSD Checklist-Military, a paper and pencil instrument), and depression (PHQ-9) scores when using baseline dependent score, number of PTSD medications, sex, and number of years since discharge from the armed forces as covariates ( $p=0.0002$ ). Percentages of participants with clinically significant improvement on the CAPS ( $\geq 10$  point reduction) were TM=62%, PE=42%, and HE=32%.

**Reduction in PTSD Symptoms and Depression: Comparison of Transcendental Meditation, Prolonged Exposure and Health Education**



**Figure 2: Comparison of TM, Prolonged Exposure and Health Education on PTSD and Depression**

**Speed of Effect**

While trauma-focused therapies have significant effects on reducing PTSD symptoms, these effects are most clearly seen after the first month of treatment in standard distributed formats for delivery. With TM, effects for many people are experienced almost immediately (see Appendix 2: Veteran Experiences with TM). Research has shown that TM produces clinically meaningful reductions in PTSD at 10 days<sup>33</sup> and two weeks.<sup>34</sup> Nidich found that reduction in PTSD as measured by the PCL-M occurred more quickly with TM than with Prolonged Exposure (see Figure 3).<sup>32</sup>

**Effectiveness of TM in Treating Comorbidities of PTSD**

Approximately 80% of individuals with PTSD meet criteria for at least one other psychiatric diagnosis and a substantial number have three or more other psychiatric diagnoses.<sup>35,36</sup> Chief among these are depressive, substance abuse and anxiety disorders.<sup>36</sup> Sleep disorders are also very prevalent—75% of veterans surveyed by the Wounded Warrior Project in 2017 reported sleep problems.<sup>37</sup> A non-psychiatric comorbidity of PTSD is increase in cardiovascular risk. Veterans with PTSD have 77-85% greater likelihood of developing high blood pressure than those without PTSD.<sup>38</sup> These comorbidities compound the effects of PTSD, leading to greater disability, greater cost, and greater suffering. A large body of research, including with military populations, has demonstrated the effectiveness of TM in treating these conditions, which strengthens the justification for including TM as a first-line treatment for PTSD.

Change in PCL-M for interim and 3-month posttest scores by treatment group

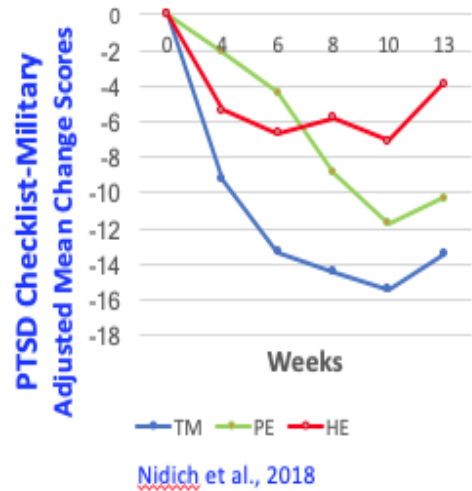


Figure 3: Change in Interim and 3-Month Test Scores

Depression: A meta-analysis of the five TM studies focused on combat veterans with PTSD that included depression as a dependent variable shows that TM has a large average effect (-.96) on reducing depression in this population (see Figure 4). Randomized controlled trials on other patient populations have found that the TM technique reduced depression in patients with chronic heart failure,<sup>39</sup> ventricular hypertrophy,<sup>40</sup> HIV,<sup>41</sup> and in prison inmates<sup>42</sup> and pre-hypertensive young adults.<sup>43</sup> Controlled trials on the general population have found that TM practice reduced depression in business managers,<sup>44</sup> Japanese industrial workers,<sup>45</sup> high school students,<sup>46</sup> and school teachers suffering from burnout.<sup>47</sup>

The Effects of the Transcendental Meditation Technique on Depression in Combat Veterans

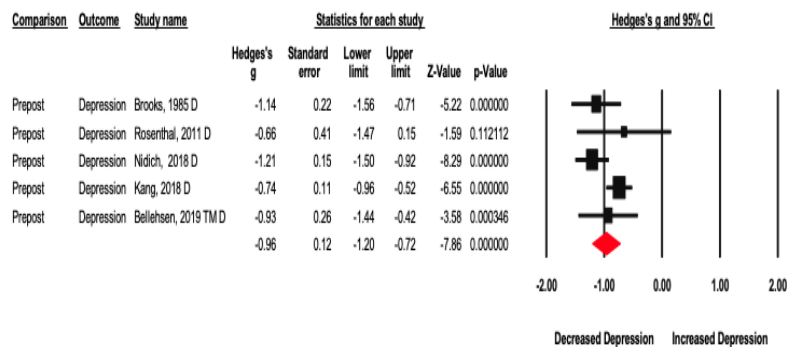


Figure 4: Effects of TM on Depression in Combat Veterans

**Substance Use Disorder:** In meta-analyses, TM was more effective in reducing smoking, alcohol consumption, and illicit drug use than conventional programs, whether or not these were combined with relaxation techniques.<sup>48</sup> In a randomized controlled study of 118 chronic male alcoholics undergoing in-residence rehabilitation treatment, patients practicing TM for 18 months showed significantly fewer drinking days than other groups, including patients receiving EEG neurotherapy and conventional addiction counseling.<sup>49</sup> A recent study of patients in a residential rehabilitation program for alcohol use disorder found that those who were closely adherent to twice daily practice of TM (recommended schedule) were significantly less likely than controls to resume any drinking (25% vs 59%) or heavy drinking (0% vs. 47%) post-discharge.<sup>50</sup>

**Anxiety:** A meta-analysis of 146 independent outcomes compared the effects on psychosocial stress (anxiety) of all stress-reduction and relaxation techniques that had been reported in the scientific literature. The TM technique had a moderate to large effect on reducing anxiety (ES=.7) and reduced anxiety to a significantly greater extent than other forms of meditation, relaxation or stylized rest.<sup>51,52</sup> A meta-analysis of 30 studies found that TM was more effective in reducing trait anxiety than mindfulness or other meditation techniques.<sup>53, 54</sup> Another meta-analysis of 16 randomized controlled trials found TM to be especially effective in reducing anxiety in people with elevated anxiety, including prisoners, war veterans and war refugees, with rapid reductions in anxiety within the first two weeks of practice.<sup>55</sup> A three-month randomized controlled study of secondary school teachers found that TM practice significantly reduced perceived stress, depression and overall teacher burnout.<sup>56</sup> Two months of regular TM practice significantly reduced perceived stress and mood disturbance in family caregivers, including reductions in anxiety, depression, anger, confusion, and fatigue, and increase in spiritual well-being.<sup>57</sup>

**Sleep Disorders:** A three-month randomized controlled trial found TM improved sleep in war veterans with PTSD compared to psychotherapy.<sup>31</sup> A controlled longitudinal study reported improved sleep as well as reduced hostility and decreased neuroticism in incarcerated offenders.<sup>58</sup> A five-month controlled study of 735 Japanese industrial workers found that TM reduced the number of workers with delayed sleep onset by 30% and those with middle of the night insomnia by 26%.<sup>45</sup>

**Hypertension:** Nine randomized clinical trials have demonstrated that the Transcendental Meditation technique significantly reduces blood pressure in persons with hypertension,<sup>53-60,83</sup> although no published studies to date have reported blood pressure outcomes in veterans with PTSD. A meta-analysis of 107 independent studies on stress-reduction and hypertension found that the Transcendental Meditation program reduced blood pressure to a significantly greater extent than other mind-body interventions that have been studied in this regard.<sup>68</sup> Further independent meta-analyses have confirmed that TM reduces blood pressure.<sup>69,70</sup> A scientific statement from the American Heart Association (AHA) in 2013 found evidence that TM reduces blood pressure and recommended that ‘TM may be considered in clinical practice to lower BP.’ The AHA report found insufficient evidence to recommend other meditation techniques, including mindfulness practices.<sup>71</sup>

### **Comparison of TM and Mindfulness Meditation**

TM and mindfulness meditations involve different practices and have different physiological effects.<sup>72</sup>

MBSR (Mindfulness-Based Stress Reduction) is the mindfulness program with the most studies on PTSD symptoms and thus most open to comparison with TM. A meta-analysis comparing the six peer-reviewed TM studies on veterans with PTSD<sup>30-32,73-75</sup>, and seven studies on MBSR<sup>76-82</sup> found the summary effect for MBSR on PTSD reduction was moderate,  $g = -.51$ , and for TM large,  $g = -1.14$ . Figure 5 shows the within-group changes from pretest to posttest for the PCL for all published PTSD research on TM and MBSR.

**Acceptability to Veterans and Feasibility of Program Implementation**

There is ample evidence that TM is acceptable to veterans. More than 4,000 veterans, active duty soldiers and military cadets have learned TM in the last decade through organized programs

associated with the David Lynch Foundation and TM for Veterans. Thousands more have learned independent of these programs. Boulder Crest Retreat Center, an award-winning retreat center for veterans with PTSD operating in Virginia and Arizona, has made TM a cornerstone of its program and all veterans who attend learn TM. More than 300 veterans have learned through this program and the reaction to learning TM has been consistently positive.

Research data also supports the acceptability of TM to veterans with PTSD. In the 2018 *Lancet Psychiatry* study comparing TM to Prolonged Exposure therapy, the non-completion rate for individuals in the Prolonged Exposure group was 38% vs. 25% for the TM group.<sup>32</sup> This indicates that TM is at least as acceptable as PE, which is currently considered the “gold standard” treatment for PTSD used in VA Medical Centers throughout the country.

The feasibility of implementing the TM program with veterans has also been demonstrated. TM has been taught effectively to veterans and active duty military personnel in a variety of program settings—in-residence, out-patient, and through local TM Centers. Two in-residence programs for veterans using TM are the Boulder Crest Retreat Center and the VA-funded National Substance Use Disorder Pilot Program. Out-patient institutional programs have been implemented in numerous VA Centers and at the Eisenhower Medical Center, Fort Gordon, Georgia. TM has been successfully introduced as a resilience-building technique to over 1,000 cadets at Norwich University and to more than 100 officers at the National Defense University in Washington, D.C. TM has also been taught to veterans with excellent results through Transcendental Meditation Centers around the country.<sup>73</sup>

**Cost Effectiveness of Transcendental Meditation**

The Congressional Budget Office in 2012 calculated that the average four-year cost of treating a veteran with PTSD through a VA facility was \$20,200. PTSD-specific treatment for veterans

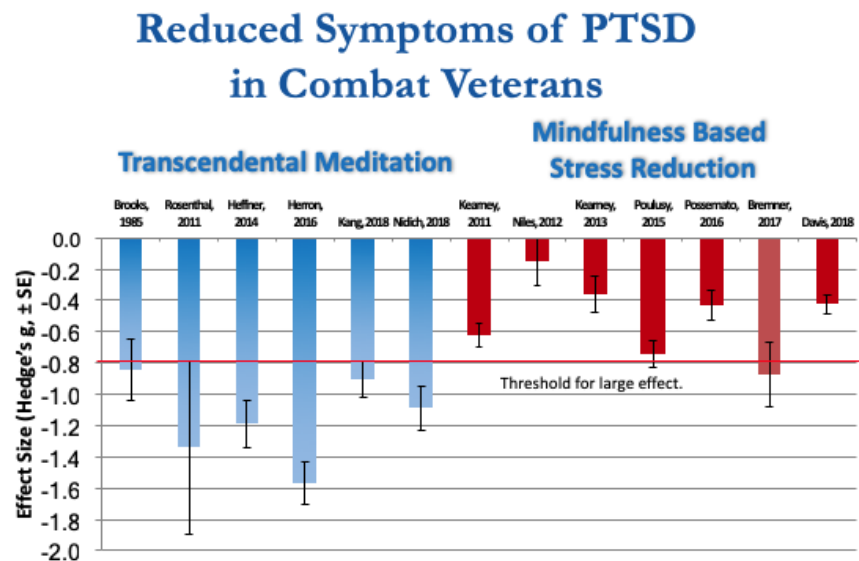


Figure 5. WithinGroup effect sizes for TM and MBSR

amounted to \$10,000, nearly half of the total cost of treatment for veterans with PTSD at the VA. These costs are front-loaded with cost of PTSD-specific treatment being \$4,100 in the first year.<sup>83</sup> The lifetime cost of the Transcendental Meditation program ranges from \$960 to \$2500 per veteran depending on implementation option--at a TM Center, out-patient at a VAMC/medical clinic, or inpatient with long-term follow-up. While using Transcendental Meditation as a first-line treatment for PTSD would not entirely eliminate other diagnostic and treatment costs of PTSD, there are significant potential cost efficiencies from using TM as a primary PTSD treatment. Research has shown, for example, reduction in psychotropic drug medications in active duty personnel with PTSD or anxiety disorder.<sup>67</sup> The potential cost-savings from using TM are augmented by its effectiveness in treating comorbid conditions. Health care utilization research on general populations has shown that TM decreases hospital admissions in all categories of disease.<sup>84</sup> Research has also shown reductions in health care costs across diverse populations: high cost,<sup>85</sup> elderly,<sup>86</sup> and non-elderly populations.<sup>87</sup>

### **Conclusion**

Decisions about clinical application and policy should be based on the convergence of evidence from a variety of sources that arrive at the same conclusion. More than 400 peer-reviewed studies, including more than 50 on PTSD and its comorbidities, have documented the benefits of TM practice for mind, body, and behavior. The research suggests that TM is as effective at reducing PTSD symptoms as currently utilized approaches while also being effective at treating comorbidities of PTSD. It is acceptable to veterans and feasible to implement. The convergence of evidence suggests that TM offers an effective and safe first-line or adjunctive method for treating PTSD as well as reducing attendant expenses.

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## Appendix 1

### All Studies on TM and PTSD: Study Characteristics and Outcomes

<i>Study ID</i>	<i>Population/ Trauma Type</i>	<i>Study design</i>	<i>Sample Size</i>	<i>Duration in weeks</i>	<i>CAPS ES (95% CI) Pre- Post</i>	<i>PCL/ Other ES (95% CI) Pre- Post</i>	<i>Depressi on ES (95% CI) Pre-Post</i>	<i>Clinica lly Signific ant Reduct ion PTSD</i>	<i>Probabl e Loss PTSD Diagnos is</i>	<i>Other (Significant Findings)</i>
Brooks, 1985 (31)	War Vets/ Combat- trauma	RCT	18	12		This study was pre-PCL. Constructed from DSM-IV criteria -1.24	BDI -1.2	*	*	Reductions in family problems, insomnia, anxiety, alcohol, employment problems
Rosenthal, 2011 (75)	War Vets/ Combat- trauma	Pre- Post	5	12	-1.34	-1.34	BDI 42% reduction	100%	60%	QLES Improved quality of life
Heffner, 2014	War Vets/ Combat- trauma	RCT	65	8	-.88	-1.19		*	*	

Saginaw, MI (30)										
Herron, 2017 (73)	War Vets/ Combat-trauma	Pre-Post	46	4,12		-1.83		87%	80%	
Kang, 2018 (Minneapolis) (74)	War Vets/ Combat-trauma	Pre-Post	29	9,17	-0.96	-0.92		61%	*	
Nidich, 2018 (32)	War Vets/ Combat-trauma	RCT	203	4,6,8, 10,13	-0.90	-1.10	PHQ-9 -1.22	60%	*	POMS Total Mood; QLES quality of life
Bellehssen, Submitted (88)	War Vets/ Combat-trauma	RCT	40	12	-0.93	-0.80	BDI -1.01	*	50%	
Tedeschi & Moore, 2019 (89)	War Vets/ Combat-trauma	Pre-Post	49	52,78		56% reduction	DASS 21 50% reduction	*	*	Anxiety, Stress, Insomnia, Suicidality, Stress Reactivity
Chapin, 2016 (90)	War Vets/ Combat-trauma	Pre-Post	12	8		-0.88	OQ-45 -1.58	58%	44%	
Rees, 2013 (91)	War Refugees/ Combat Trauma	Pre-Post	21	4,19		-4.1		100%	90%	
Reese, 2014 (33)	War Refugees/ Combat Trauma	Pre-Post	11	1.4,4		-2.6		*	*	
Nidich, 2016 (42)	Men Prison Inmates: Interpersonal violence	RCT	181	16			Trauma Symptom Checklist -0.74 (high trauma group)	*	*	Perceived stress, anxiety, sleep
Nidich, 2017 (92)	Women Prison Inmates: Interpersonal violence	RCT	22	16		-0.85		80%	*	
Bandy, 2019 (93)	College Students/ Violence, sexual abuse	CT	68	2,4,15		-1.85	BDI -1.66	*	79%	

\*Not reported

## Appendix 2: Veteran Experiences with TM

My girlfriend, despite every reason not to, stood by my side. It meant a lot to me, and I was determined to find help calming my mind. I was willing to try anything, even some crazy magic that she suggested, like meditation. When she suggested it to me, I said of course I would try it, but, deep down, I didn't feel like I would gain anything from it. After my first week of meditation I was able to sleep. It's like I was living in a fog of war, and TM cleared the fog, allowing me to see things clearly. My day-to-day functions became clearer. My depression has improved daily and my aggression has vanished. TM has given the perspective to live with a peaceful mind. I find new improvements daily when I am consistent with my meditation.

\*

For me TM acted like an ice pack placed directly on the heated up and hyper-vigilant part of my brain that couldn't calm down, that couldn't think straight, that couldn't hold a rational or coherent thought... Where everything else had failed, where other attempts and interventions had fallen short, where I had previously been baffled, TM literally cracked open my heart... The experience of TM almost defies description. It represents an experience I will never get over.

\*

TM was a concept I thought was BS. Nothing that easy would work on a person so high strung like myself. I was leery... until I tried it. IT WORKS!!! The ability to calm my mind and just exist with just me, for just me and only for just me is amazing. It's like my cobwebs are gone. I can begin my day on a clear note, and I end each day with the same clarity. I'm just amazed how this concept, as I thought of it at first, has transformed my life and I have only been doing it for 3 days. I'm finally excited about things again because I know just how other vets with PTSD can benefit from TM like I have. The difference it will make can't be bought or downloaded. It comes from within and that is a place I know I've missed, a place my PTSD took from me and TM has given it back.

\*

I was interested in TM, but I was skeptical at the same time. The power of the TM meditation... It was surprising to me. Having that inner peace after meditation really emboldened me to deal with things that I'd been just kind of stuffing away. To be able to have relief from agitation, have relief from anger, frustration, sleeplessness, alcoholism, drug addiction — that's huge.

\*

In the short period of time I have been meditating, there has been a near reformation of my life. What the doctors and medicines promised to "potentially" do over the course of years, I have gotten much closer to achieving in months. Some situations remain difficult, and so they will take longer to overcome and grow beyond. At times the troubling thoughts and nightmares come back, but, as a whole, the progress is palpable. I feel more in control of my life now, and I'm becoming hopeful about rebuilding and getting better, rather than lamenting the loss of who I was, and grimly marching the entire way through my decline. In addition to the calm I experience through meditation, I have also found it easier to manage my physical pain. I have been told that I look like an entirely different person from who I was coming back from country. I am vibrant, I smile, and I look much more grounded. The truth is you can't practice TM without it positively affecting you.

\*

Shortly after my Navy career I began to experience many difficulties in my well-being. It all began with an onset of paranoia and escalated to full blown PTSD. I would drink alcohol to excess to numb the pain of loneliness I felt from isolation. I was afraid to venture out of my house or drive or do anything that included interaction with people. Through TM I began to trust, blossom, and most of all I began to heal. I began to come out of my nightmares and face the battle I had ahead. I began to attend the sessions faithfully, I began to drive, and I started community college. I got the courage to apply for a job in a hospital. This program has given me my life back.