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Emotional Freedom Techniques (EFT) For Traumatic Brain Injury

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Abstract:

This article describes the resolution in one session of several residual symptoms following severe Traumatic Brain Injury (TBI) six years earlier in a 51 year-old woman. The intervention was Emotional Freedom Techniques (EFT), developed by Gary Craig, the first author of this article. Mind Mirror electroencephalogram (EEG) monitoring during EFT sessions revealed increasing patterns of relaxation and centeredness as the treatment progressed. Implications for further research and for assessment and treatment of wartime TBI, PTSD and depression are discussed.

Key words: Emotional Freedom Techniques, EFT, Energy Psychology, Traumatic Brain Injury, TBI, Post Traumatic Stress Disorder, PTSD, Depression, Mind Mirror Electroencephalogram, EEG, Vertigo

Introduction

Sally, a 51 year-old woman, came to a San Francisco EFT intensive treatment session in September of 2007, along with fourteen other people who had significant physical or emotional issues. Six years previously, Sally had been involved in a serious automobile accident and was diagnosed with Traumatic Brain Injury (TBI). Among her presenting symptoms was poor balance and the necessity to use a walking stick most of the time.

I have applied EFT for TBI on one other occasion previous to this and achieved positive results. That case (Mary) was filmed and appears on our EFT for Serious Diseases DVD series. Mary, however, did not require a walking stick and thus I would describe Sally's TBI symptoms as more severe than Mary's. Further, I have heard many reports from other EFT practitioners of symptoms of TBI being significantly improved through EFT.

I dealt with the 'pressure' that Sally reported in her head. She equated this with her general TBI symptoms. This pressure subsided within minutes of using EFT. We continued with further rounds of EFT and she was able to stand on one foot and then was able to hop on one foot without any balance difficulties. A few minutes later we went outside where she was able to run around the hotel courtyard as freely as anyone else. She also experienced a marked decrease in her hypersensitivity to the

multiple stimuli of a 'busy' environment. In an 18-month follow-up, she has not had to use her walking stick since her EFT session.

Sally still has some confusion and general overwhelm in busy public environments but this is improved over when she first came to us.

Sally's report

It all started with a Thanksgiving vacation that never occurred. It was Nov. 2001 and my family (husband, two children and my parents) were driving from Connecticut to Florida to board a ship for a Caribbean cruise. Well, the trip came to an abrupt end with a horrific accident on Route 95 in Florence, South Carolina.

Two vehicles rolled over without ever touching. They were just trying to avoid one another. The front-seat passenger in each vehicle perished in the rollovers. The drivers were pretty much untouched. There was a couple heading south in a small pickup truck and the six of us in our SUV. My mom, the driver, and my son were bruised; my dad perished; and my husband, daughter and I were in intensive care with many complications. Thank the heavens above, that we were near McLeod's, a great trauma hospital.

I have no memories from two months before to a month after the incident; and I really and truly don't want to know all the things that were wrong with me and my body. I do know that I had lots of broken bones, collapsed lungs, a punctured bladder, broken hips, and my life was touch and go for quiet a while. But the major long lasting issue is my traumatic brain injury (TBI).

I don't remember anything from McLeod's hospital. I don't remember being upset about the loss of my dad. I have been told that when I was in the hospital each time someone told me my dad died; I would get very very upset and cried hysterically. Then, when I was distracted with something else, I wouldn't remember my dad had died until someone would tell me and it was like I heard it the first time and was out of control again. I've been told that it took a months before I really understood and remembered that he was gone. I must have cried all my tears during those times. I don't remember the details because since I got home from rehabilitation I don't get upset about his loss. I just miss him.

Once the life threatening problems passed, I was airlifted to Gaylord Rehabilitation Hospital in Connecticut. It is there I was re-taught to drink, eat, walk and talk, with the aid of Occupational Therapy, Physical Therapy, Speech Therapy, and more. I continue to have to relearn things I think I remember to do, yet I have to be shown because I just can't remember or figure them out when I go to do them.

I only have a spotty memory of my time at Gaylord. The first thing I remember at Gaylord is the net bed I was zipped in, then the eating tests needed so I could graduate to eating bread and other foods, then the physical therapy with the walker, and on to walking using bars in the gym. I was told I always wanted to get out and go home. I now go to a TBI support group once in awhile and the group leader has TBI and was hospitalized with TBI on the same floor as I was, when I was there. He told me I cried loudly all the time when I was a resident. This really surprises me, considering that I'm generally not a crier about anything.

Traumatic Brain Injury has many facets and affects the individual in ways that are not easily visible. In my case, most are cognitive and short-term memory related. Yet my balance was gone due to injury to my left ear from the accident because I have a hole through my ear into

my head. Consequently, since I returned home, if I walked any distance or was in very challenging environments I really needed and used a walking stick. I was unstable walking, experiencing significant vertigo - feeling everything around me was spinning and that I would fall down if I didn't have the walking stick. It was a horrible feeling of insecurity and instability. These feelings really limited where, when, and how long I would go anywhere.

My ear nose and throat (ENT) doctor said the physical reason I needed the walking stick was to compensate for the balance loss in my left ear.

When I speak of being in challenging environments, I mean places like stores, greenhouses, and surroundings with things near my head. Sometimes there wasn't anything we could see that would set me off. But it would happen all of a sudden and that's when I needed my walking stick or support of someone or of something and I had to get out of the environment immediately. My "head doctor" was working with me to get past this problem for several years with minimal progress. My ENT doctor, said to keep using the walking stick and that many businesses have security systems on all the time and the electromagnetic fields could be negatively affecting me. He also said my balance will always be an issue due to my loss of my sense of balance in my left ear. He even did surgery to try and close up the hole internally, so he was basing his opinion not just on my symptoms but also on what he saw in the surgical procedure within my ear. So I thought I would just have to deal with the balance and vertigo issues the rest of my life.

Then I had the opportunity to spend a few days with Gary Craig, the founder of EFT and several other excellent EFT Experts. It was then that I did EFT and got rid of the walking sticks for good.

When I arrived at the facility where I met Gary Craig and the EFT'ers, I was ok until I walked down a hall that had patterned carpet that literally pushed me over the edge. I had my walking stick and I still needed to hold onto the wall and vertigo was spiking through me. I found it unbearable. I literally could not take a step without holding onto the wall with one hand and my walking stick with the other. Panic just filled my body as I felt like I was weaving, spinning and completely unstable.

Then I had the opportunity to experience EFT with the best therapists. The focus of the EFT affirmations was on the balance and lack of stability. It wasn't possible for me to relate this problem to an event that seemed to have caused it since I can't remember before or after the incident that created this situation. So we didn't tap on an event with a crescendo of the problem because I didn't have any such focus to relate to. So the tapping focused on the symptoms at hand at the moment.

When asked how I felt on that carpet area on a scale from 1 to 10 with 10 being the highest, I said it is definitely a level 10 of severity. I didn't think it could get any worse. As we tapped about the feelings and the vertigo symptoms, the severity started to subside. Several additional EFT rounds were done that significantly reduced the severity. Then off to the patterned carpeted area again. It was absolutely amazing and also hard to believe that just minutes before I could barely stand to be on that carpeted area; and that now I was there without holding onto the wall, without the walking stick, with no vertigo. It was incredible! I was able to do jumping jacks, run in place, hop on one leg and spin around. How could that be? EFT was the only thing I did that could have brought about these changes.. I don't really understand it or question it. It was great! Since then, still no walking stick.

Over a year has passed and I don't get overcome with vertigo symptoms like I did and don't need the walking stick. I haven't used it once in seventeen months since the EFT sessions that eliminated the problem. I'm doing more and going more places with this issue lifted. I no longer have to strategize where I'm going or how long I will be there like I did before. My children loved going shopping with me before the accident but after the injury, shopping was out of the question. Any shopping during that time was for really short store visits (like minutes) and I absolutely needed the walking stick. Now, since learning EFT, I go just about anywhere with limited impact. At times I get overwhelmed, resulting in a pressure in my head, yet no more vertigo, and no more walking stick. I'm stable and feel reasonably balanced; not a 100% but more than adequate. I feel so blessed

As I mentioned, there are still times that I can feel pressure in my head resulting from something in the environment, yet no vertigo or major balance issues occur. If I need to stay in the environment I always have the option to use the EFT tapping to lessen the intensity of the symptoms. If it's uncomfortable doing so where I am at that moment, I can usually find a bathroom and I can go into a stall and tap the symptoms to a negligibly low level. So my symptoms decreased from 100% every time when I went into retail environments to about 5% of the time.. It is just remarkable that tapping on a series of pressure points could relieve such symptoms not just at the moment, but into the future as well. No drugs, pills, only tapping on different points on the body combined with simple affirmations. This can even be done through a surrogate tapper as well, who taps on herself or himself in my place.

I am forever grateful to Gary and the EFT experts for this astounding technique. I still live with TBI and permanent effects of the injury, effects that I've learned ways to deal with and compensate for. For example, I find myself not remembering things even after being told several times. I am easily fatigued, becoming overwhelmed and easily distracted. The things I used to excel in, like multitasking a large number of activities concurrently and accurately, understanding and retaining details, are beyond my capabilities now, but that's ok. I take life less seriously and more spontaneously and simply. I choose to look for the good in any situation and try to let the rest go. That's big for me. Being in the present and in peace is what I desire and where I want to be. Using EFT really helps when I notice I'm off track. I can use EFT to get myself back on track. And what's funny, is when I might be getting off track my son even says, "Mom, tap, ... tap, tap."

During the time with Gary Craig and others, many tests were conducted looking at my blood, brain waves, meridians, and other functions before and after EFT sessions. One thing that was clarified was the value of using the 9 gamut. This is a short process that uses both the right and left sides of the brain and gets them to work together effectively. There was definitely a difference noted in the brain wave test results when I did this. So when I do a round of EFT, I immediately follow up with a round of 9 gamut. It only takes a few more seconds and it really solidifies the results.

In the writing of this article, the question of possible PTSD was raised. I never thought I could have PTSD. I am on Celexa 10mg daily for anxiety, not necessarily for depression. I can get easily irritated when I'm completely off Celexa so I go back to taking it to take the edge off. I don't like taking prescriptions and so try not to take them often. PTSD, TBI or Depression were not the topics of my EFT sessions in California, just the symptoms I was experiencing.

EFT can be used for many other problems as well. It certainly has made a difference in my life, and it can in yours as well.

Electroencephalograph readings during the initial EFT sessions

Mind Mirror electroencephalograph (EEG) readings were recorded during the initial EFT session with Sally by Donna Bach, ND and Gary Groesbeck, BA. Gary and Donna are certified Awakened Mind Coaches and have worked extensively with Anna Wise as assistant trainers for the Awakened Mind EEG biofeedback program.

In San Francisco, in September of 2007, Gary Craig explored the possibility of using EFT with people who had serious health challenges. We recorded some very interesting brain wave changes in these people in the course of their using EFT. We monitored the brain waves of 16 subjects in real time during EFT sessions. We utilized the Mind Mirror III, which is the only Neurofeedback hardware/software combination engineered over the last forty years to measure specific brain waves reflecting various states of consciousness.

As one deepens the relaxed and transformative state, one enters into a brain wave pattern characterized by increasing alpha and theta brain waves. This is usually what we experience as we fall asleep. In healing the body and mind, however, the objective is not to fall asleep, but to remain attentive to all that is arising. The Awakened Mind pattern is essentially a state of psychophysiological relaxation, which enables us to function in our daily lives with a more optimal and relaxed state of mind. This relaxation is accompanied by a more prominent alpha/theta brain wave pattern, including low frequency beta (13-20 Hz).

We had seen elsewhere that some EFT practitioners had used tapping just to quiet their minds, and we have found this to be a very useful approach in teaching Awakened Mind exercises. Repressed or unexpressed emotions, stress, and anxiety tend to increase the higher beta and reduce the alpha and theta range (Peniston 1990, Thompson and Thompson 2003). However, when tapping on emotional issues, a quieting of high beta (24-38 Hz) comes about as a benefit of the emotional release itself, due to decreased anxiety and stress. This decrease aids in what we see in deepening, advanced meditative states: a balance of frequencies in right and left hemispheres at all frequencies, with increased alpha/theta.

It has also been known for several decades that entering into this state releases emotionally charged memories and can actually result in the rapid recovery from all kinds of serious conditions, such as post-traumatic stress disorder (PTSD), addictions, and, as in Sally's case, the emotional residuals of accident trauma resulting in a TBI (Peniston and Kulkoski, 1990).

There were some challenges in these brainwave observations, as the EFT tapping and talking produces artifacts in the record, but with a trained eye one can discern the relevant patterns. Our ultimate objective was to see if EFT could move people towards a more optimal form of brain function, which Maxwell Cade called the Awakened Mind pattern (Cade and Coxhead, 1978; Wise, 1997; 2002) This pattern was identified by Maxwell Cade, a British biophysicist and zen roshi, over four decades ago, in collaboration with Geoffrey Blundell, who developed the recording instruments. It is a brain wave pattern correlated with high performance in creativity, and deeper personal, emotional and spiritual insight. The Awakened Mind pattern is seen in experienced, long term meditators. This pattern is reflected in balanced right and left hemisphere functions in all frequencies and an increased amplitude in alpha and theta.

We saw the Awakened Mind brain waves pattern occurring, sometimes very quickly, in people Gary Craig was instructing in EFT. This was the case with Sally. Several distinct shifts were apparent. First, the non-stop, chattery, 'monkey mind' of high frequency beta waves (24 to 38 Hz) began to decrease in amplitude, while the lower frequencies of beta (13 to 20 Hz), present when there is less anxiety,

increased proportionately. Second, an increase of the alpha/theta wave band (4-13 Hz) was observed.

While having the EFT administered, as Sally began to have an improvement in her symptoms of light and sound sensitivity and also her balance and equilibrium challenges, her brain waves started to shift increasingly towards this Awakened Mind state within a few minutes. To varying degrees we saw this shift occurring in all of the subjects we monitored during the EFT counseling sessions. As new emotional issues arose and were resolved with EFT, there would appear to be more amplitude of alpha and theta. We even saw some of the people momentarily produce some of the complete Awakened Mind patterns as they came to deeper insights concerning their improvements and the amazing changes and benefits that they were experiencing.

We were delighted to have the privilege of observing the dramatic beneficial changes that Sally demonstrated while working with Gary Craig. It was very touching to see her joy at being able to do things she had not done in years, and how it was even hard for her to believe it herself. Sally's brain waves initially showed high beta at the beginning of the EFT process, correlated with high anxiety. With only a few rounds of tapping, her pattern shifted to lower amplitudes, showing that her mental tensions and EMG muscle tension were relaxing. Within a few minutes, her EEG beta frequencies were reduced to half relative to the intensities we had observed at the start. The balance of activity between her right and left hemispheres was improved in a short time, showing better hemispheric integration, which is a desirable goal for anyone seeking improvement from brain injury.

In our clinical experience of Neurofeedback, two of the most common problems encountered are how to still the mind, and how to deal with disruptive emotional memories. EFT allows people to more quickly resolve these issues and to develop the state of the Awakened Mind. EFT appears to be an excellent tool to aid in achieving these ends. EFT clearly produced a clinical breakthrough in Sally's presenting physical symptoms and disabilities. It would be a very rare person who would ever respond in the very first session of conventional neurofeedback therapy as dramatically as Sally did.

We observed Sally on the following day for another session, and her improvements of the day before were stable and continued without regression, and she was able to deal with further emotional issues during the monitored EFT therapy. The improvements we saw while doing the second session were similar to the day before, consistently reflecting fewer stress and anxiety patterns, more left/right hemispheric balance, and more access to the subconscious mind (alpha and theta) without the challenges of anxiety or fear (too much high frequency beta) blocking her new behaviors and abilities.

Sally's DVD segment, the edited version of which Gary Craig provided, did not include the inset of the actual monitors of brain wave patterns, so we are giving these comments from the notes that we took from her sessions and our memories of what occurred.

Discussion

Sally's TBI

The diagnosis of TBI indicates that a person has had a blow of some severity to their head, with resultant residual damage to the brain. The damage may or may not be demonstrable on brain scans but is evident in impaired cognitive or motor functions.

The National Institute of Neurological Disorders and Stroke (Web reference) explains:

Traumatic brain injury (TBI), also called acquired brain injury or simply head injury, occurs when a sudden trauma causes damage to the brain. TBI can result when the head suddenly

and violently hits an object, or when an object pierces the skull and enters brain tissue. Symptoms of a TBI can be mild, moderate, or severe, depending on the extent of the damage to the brain. A person with a mild TBI may remain conscious or may experience a loss of consciousness for a few seconds or minutes. Other symptoms of mild TBI include headache, confusion, lightheadedness, dizziness, blurred vision or tired eyes, ringing in the ears, bad taste in the mouth, fatigue or lethargy, a change in sleep patterns, behavioral or mood changes, and trouble with memory, concentration, attention, or thinking. A person with a moderate or severe TBI may show these same symptoms, but may also have a headache that gets worse or does not go away, repeated vomiting or nausea, convulsions or seizures, an inability to awaken from sleep, dilation of one or both pupils of the eyes, slurred speech, weakness or numbness in the extremities, loss of coordination, and increased confusion, restlessness, or agitation.

Sally, the person whose treatment is described in this article, had a severe auto accident on November 17, 2001. Medical records from the rehabilitation hospital to which she was transferred on December 10, 2001 indicate she had:

1. A left frontal subdural hematoma, which is bleeding between the skull and brain. Such bleeding puts pressure on the brain that can cause further damage in addition to injuries to the brain sustained by the blow(s) to the brain sustained in the accident. It was also suspected that she had a left basilar skull fracture.
2. Left rib fractures with bleeding into the chest cavity.
3. Left lower lobe pneumonia
4. Bleeding into the stomach cavity (retroperitoneal hematoma).
5. Fractures of her pelvis and left scapula.
6. She required a tracheostomy for support of her breathing and a gastrostomy tube for feeding.
7. "On exam the patient presented as a somnolent, but arousable, restless at times, 45-year-old white female in no acute distress. She kept her eyes closed for most of the exam. When she was able to communicate, she appeared confused and only partially oriented. She was partially cooperative as well... She appeared to be confused with decreased orientation... Memory deficits were also suspected..."

During her hospital course "She was noted to have significant problems with anxiety and restlessness with associated decreased safety awareness. Restraints were necessary for a period of time, however, these were eventually discontinued as the patient's cognitive and behavioral status improved." Her tracheostomy and gastrostomy tube were removed and closed without problems.

8. Anticonvulsant medications were prescribed to prevent seizures. One of these caused decreased white cell counts, and another was substituted. Her liver function tests indicated a possible drug reaction, so this was discontinued.
9. At discharge, she was using a rolling walker with visual supervision of staff. Speech therapy was a help but she still had mild to moderate deficits of verbal and written expression, reading

comprehension, attention, memory, reasoning and problem solving, with decreased ability to sustain and alternate her attention at the time of hospital discharge.

The diagnosis of TBI is confirmed by these observations. The residuals from the accident at the time Sally started to learn EFT are noted above by Sally. They were primarily in the area of imbalance and overwhelm with a 'busy' environment that had a lot of visual and/or auditory stimulation.

A question could well be raised whether some of Sally's symptoms involved a post-traumatic stress disorder (PTSD). Numbers of authors have noted that this may occur, including "a sense of being overwhelmed with even simple tasks" (Swiercinsky, No Date); overlapping symptoms of TBI and PTSD, such as "increased anxiety, short attention span, limited concentration, problems with memory" (PTSDCombat); "strong emotional reactions to the incident" (Ursano, et al. 1999); intrusive and arousal symptoms (Bombardier, et al. 2006). Bombardier, et al. (2006) also note that "Coma severity was not related to PTSD symptom criteria."

A second confounding possibility is that some portion of Sally's symptoms might be a depressive equivalent. That is, some people develop somatic symptoms as an unconscious expression of depression. Sally was reported to have been repeatedly distressed about her father's death while she was in the hospital but has no conscious recollection of this. This could support the hypothesis of a depression underlying some of her symptomatology. A review of TBI literature that considered diagnoses other than PTSD noted a high incidence of severe depression (Kim, et al., 2007). With the death of her father in the accident, and the loss of her own physical functions that took many months to clear, and the residual symptoms still present at the start of the EFT intervention, this possibility must also be considered.

Thus, the dramatic improvements in Sally's condition may have been due to releases of psychological issues that were impeding her full recovery from her TBI. EFT and related Energy Psychology (EP) methods are well known clinically for decreasing anxiety and stress reactions, and early research is beginning to validate these observations. EP has been shown to help in treatment of public speaking anxiety (Schoninger, 2004 - Thought Field Therapy); weight control (Elder, et al., 2007 – Tapas Acupressure Technique); specific phobias (Wells, et al, 2003; with partial replications by Baker & Siegel, 2005; Salas, 2001 - EFT). A review of this research has been published by David Feinstein (2008).

If the above psychological factors were not contributing to or causing Sally's symptoms of unsteadiness and difficulties with stimulus overload, then Sally's responses may indicate that EFT can help to re-organize a nervous system that is severely damaged by physical trauma. This could conceivably occur through a release of recurrent patterns of neuronal misfiring or disrupted normal connections that had been established by the brain trauma; through a repatterning of biological energy fields; or through a combination of these and other, as yet to be explored mechanisms.

Broader implications of EFT treatment for TBI and PTSD

The diagnoses of TBI, PTSD and depression – singly and in combination – are currently of great interest because of the enormous numbers of Iraq and Afghanistan war veterans who have been diagnosed with these problems. A Rand Corporation study commissioned by the Rand Health and the Rand National Security Research Division, Center for Military Health Policy Research (Tanielian and Jaycox, 2008) estimates a possible range of PTSD in Veterans of 75,000 to 250,000. A congressional study estimates that: "Nearly 3,300 troops have suffered traumatic brain injury, or TBI, according to statistics assembled last summer. And the lifetime costs of treating these ailments could pile up to as much as \$35 billion, a Columbia University report guesses." (Schachtman, 2008)

Charles Hoge and colleagues (2008) found that "Mild traumatic brain injury (i.e., concussion) occurring among soldiers deployed in Iraq is strongly associated with PTSD and physical health problems 3 to 4 months after the soldiers return home. PTSD and depression are important mediators of the relationship between mild traumatic brain injury and physical health problems."

The magnitude of the challenges in treating those with PTSD is staggering. Military hospitals and veterans' hospitals and clinics have found it difficult to meet the needs of this population because of its size, the complexity of Veterans' problems, limited treatment facilities, and the many months and years required for effective treatment with current therapeutic approaches. In an article discussed below (Church, Geronilla and Dinter, 2009) some of these issues are summarized:

Subsequent to deployment, 49% of National Guard troops report psychological symptoms, as well as 38% of Army troops and 31% of Marines (Defense Health Board Task Force on Mental Health, 2007). Antidepressants are currently prescribed for 12.5 percent of active duty personnel in Iraq and 17% of those deployed in Afghanistan, according to the Army's Military Health Advisory Team (MHAT-V). The MHAT-V report also notes that 17.9% screen positive for acute stress, depression or anxiety (Office of the Command Surgeon, 2008). Treatment difficulties are compounded by a host of co-occurring conditions, including depression, anxiety, posttraumatic stress disorder (PTSD), and addictions (Boston University, 2008). Breslau (1990) found anxiety and depression to co-occur with PTSD in 83% of cases. The data that raise most concern are media assessments indicating that approximately 120 veterans suicide every week (CBS, 2008a; 2008b). For these reasons, therapies that can effectively treat all of these conditions simultaneously, and do so in a brief time period, are of interest to researchers (Tanielian and Jaycox, 2008).

The case study reported in this article is consistent with the literature on wartime TBI in that there are often questions about whether the TBI is accompanied by PTSD and/or depression. While Sally had a remarkable recovery in one EFT treatment session, this not so unusual an occurrence when placed in the context of other reports of treatment of people with PTSD using EFT. An observational study of EFT for Veterans demonstrated that wartime PTSD can be relieved significantly in as little as six therapy sessions (Church, Geronilla and Dinter, 2009). A review of Energy Psychology research provides further early evidence that these approaches can be helpful with states of stress and anxieties. Sally's very rapid response may, however, indicate that the presence of TBI is a positive predictor of response to EFT.

In Summary

Sally, a 51 year-old woman with a history of severe head injury and TBI six years earlier, demonstrated a remarkable recovery from her residual symptoms of unsteadiness and low threshold for feeling overwhelmed by the stimuli of a 'busy' environment in response to a single EFT intervention. It is unclear to what degree this represents the neurological improvement of a TBI and to what degree it might represent the psychological improvement of a PTSD. The possibility of relief of underlying depressive symptoms should also be considered. While one cannot generalize from a single case study, this report suggests that further research using Energy Psychology techniques in treatment of TBI and/or PTSD and/or depression following TBI are warranted.

The Mind Mirror (the EEG instrument used in this study) is not widely accepted as a research tool. In support of the Mind Mirror EEG, the observations in this case study conformed to theoretically predicted brainwave frequency shifts that were observed in parallel with the clinical improvements.

These suggest, on the one hand, that the Mind Mirror may offer a non-invasive, relatively inexpensive tool to assess improvements in brain functions with Energy Psychology treatments. On the other hand, these observations may support a belief in neurological reorganization that is possible with an Energy Psychology intervention.

Future research could be enhanced with the inclusion of screening tests including Neuropsychological testing for TBI, a trauma inventory for PTSD, and an assessment for depression. A SPECT scan such as those done by Daniel Amen would be fascinating, to identify brain structures that indicate pathology and to observe and changes produced by Energy Psychology interventions.

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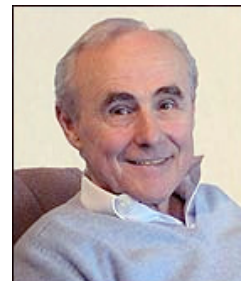
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