

## HeartMath Case Study for Certification

### Clinical Case Study: Ashley (29 yr. old female)

Session Dates: 4/15 – 9/15

#### Background Information

Ashley is a 29 yr. old married Caucasian female who is diagnosed with PTSD and TBI (traumatic brain injury). Her brain injury was sustained on 7/9/13 when she was directly hit on the driver side of her car by a semi-trailer that ran a red light.

Since the accident, Ashley has reported difficulties with memory, word recall, headaches, attention/concentration, and motor abilities. She has a master's degree in clinical psychology and was previously employed as a behavior therapist working with developmentally challenged children. She has been unable to work since her accident two years ago.

Ashley's PTSD symptoms included flashbacks and recurrent/intrusive recollections of the event, distressing dreams, intense psychological and physiological reactivity upon exposure of internal or external cues that symbolize the trauma, avoidance of stimuli associated with the trauma and numbing of general responsiveness, difficulty falling and staying asleep, irritability, difficulty concentrating, and hypervigilance. She reported experiencing panic attacks, most notably while driving. She has no history of emotional, physical, sexual or verbal abuse, nor is there any history of alcohol, tobacco, or drug use.

Ashley's family and husband are very supportive and have shared the responsibility of helping Ashley through her very trying ordeal. She has no children.

#### Presenting Problem

Ashley was referred to me by a psychiatrist in 2013 to help her with her PTSD symptoms, which were severely interfering not only with her ability to drive, but with her ability to be a passenger in a vehicle as well.

#### Diagnostic Focus and Assessment

Because of the multitude of physical and emotional complexities, Ashley is on a host of medications listed below:

#### Migraine Medications

- Baclofen
- Magnesium
- Nemenda
- Pamelor
- Nemenda
- Bystolic

## PTSD

- Zoloft
- Neurontin
- Seroquel
- Valium

## ADHD

- Vyvanse

## Therapeutic Focus and Assessment

I did a significant amount of work with Ashley for 12 months using CBT and EMDR to treat her PTSD and to facilitate her efforts to feel comfortable enough to again drive an automobile. This therapy was conducted prior to my training in HeartMath interventions. We began working with HeartMath as a major source of our therapy focus in April, 2015. What follows are the results of Ashley's process using HM interventions.

## HM Session #1: April 2015

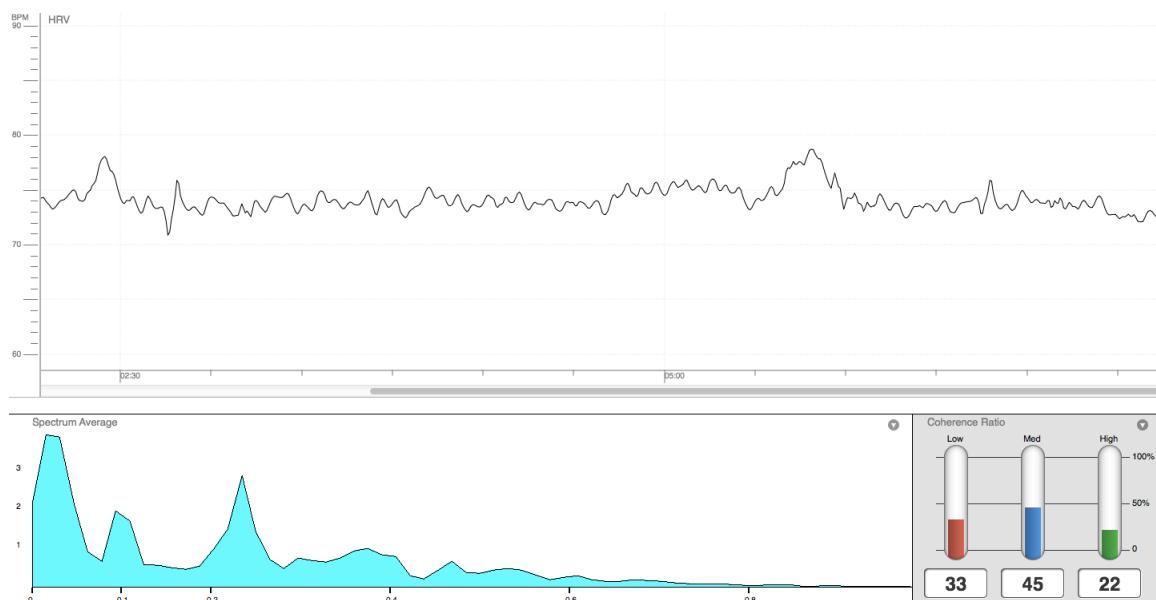
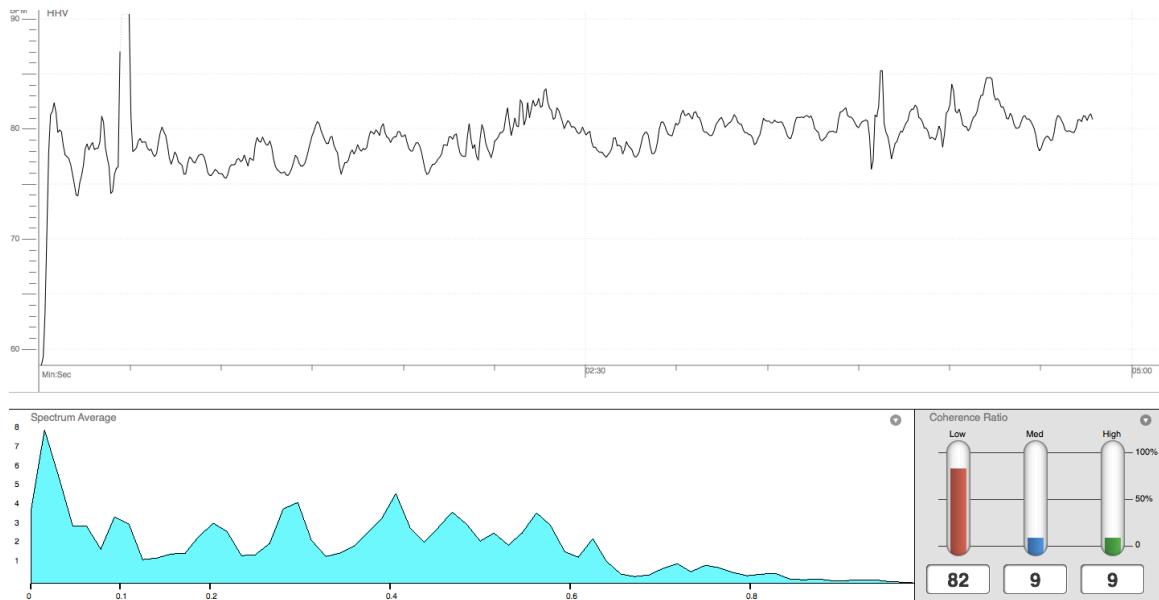


Figure 1: Baseline assessment—Resting HRV:4—Challenge Level One—No auditory or visual feedback

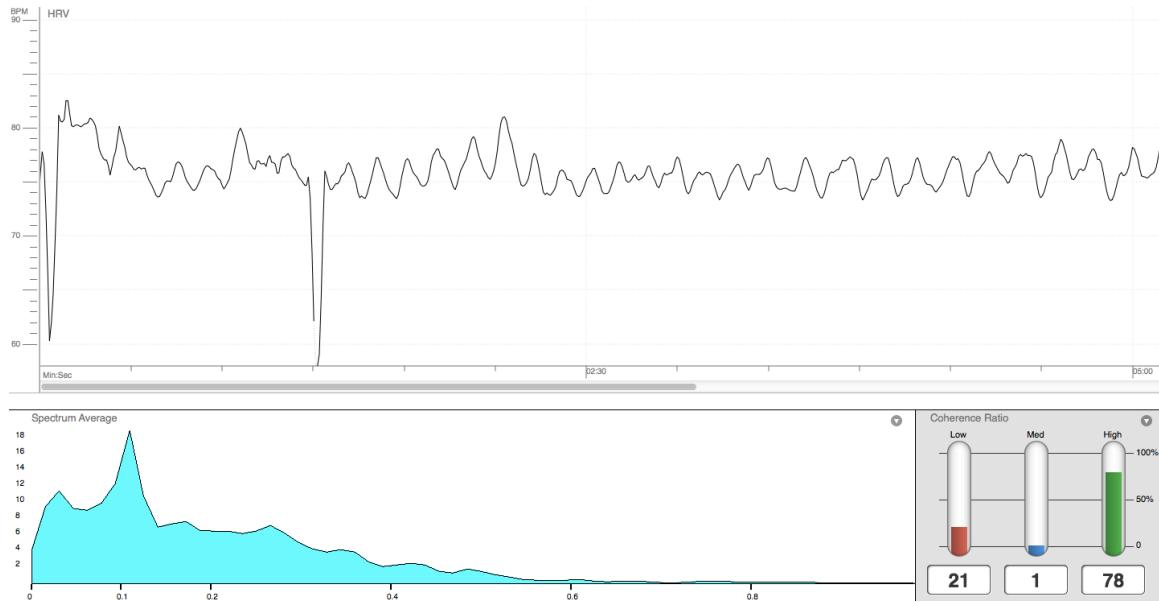
Ashley's breathing was shallow and mostly restricted to her upper chest, her shoulders rising with each inhalation. HRV ranges were well below what would be expected of someone 29 years of age.

Next, I asked Ashley to focus on something stressful. She reported that her mind immediately went to the car accident. Her low coherence ratio (See Figure 2) reflects the significant amount of stress she experiences whenever she thinks of the accident.



**Figure 2: Stress recall**

Finally I instructed Ashley to breathe in accordance with the “Six-Breaths” protocol. The results are shown below (**See Figure 3**). As a result, her high coherence ratio improved significantly. These results were immensely instrumental in demonstrating to Ashley, first-hand, the impact of her focus on a negative event in her life (the accident) and more importantly, that there were ways to empower her to bring positive change to her life. This first session definitely gave her a sense of renewed hope.



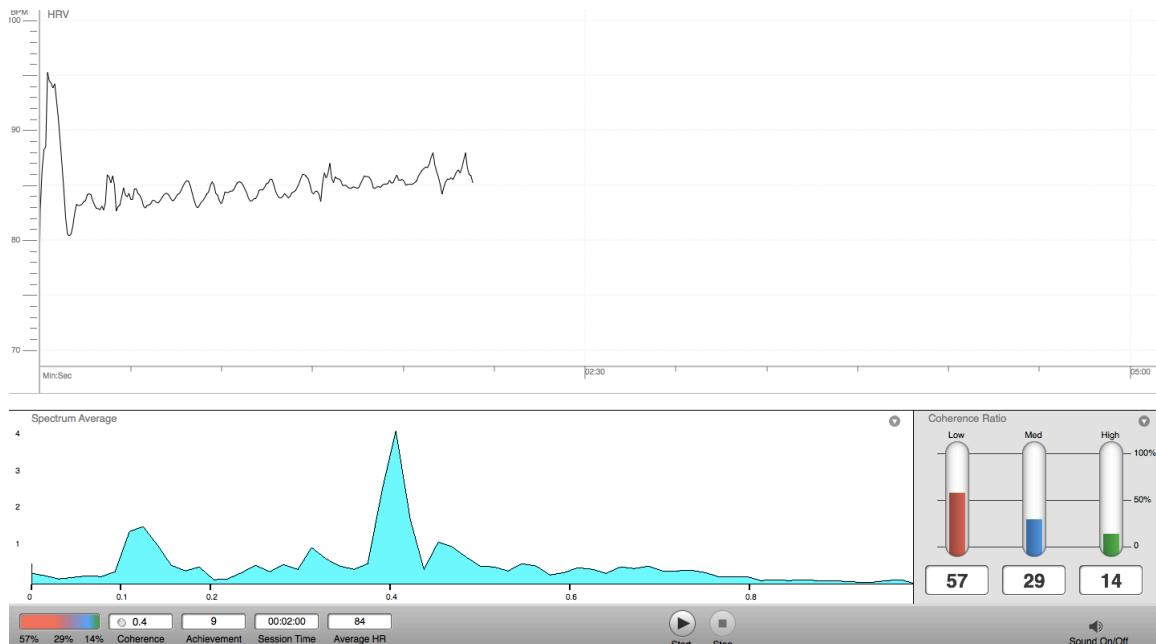
**Figure 3: Six-breath protocol**

## Session #2: May 2015

Today I introduced Ashley to the “Coherence Coach.” While she very much liked the structure of the instruction, her strong obsessive nature of “wanting to make sure she did it right” interfered with her ability to relax and create coherence. We shifted our strategy to practicing without visual feedback and I introduced the “Quick Coherence” technique.

As you can see in **Figure 4** below, there was limited success during this session. Ashley’s focus on a positive feeling would bring up so many related associations that had to do with what she had “lost” through her accident that she had trouble maintaining a positive focus. In turn, her breathing would become shallow and mostly chest-based.

For months, Ashley had reported tightness in the area of her sternum for which there was no medical explanation. The pain was highly correlated with her anxiety level. Additionally, she had developed a habit of sitting with slumped shoulders and with a concave chest. I believe that it was a reflection of her sense of vulnerability and her felt need to protect herself. This posture appeared to significantly compromise her breathing, which in turn affected her ability to generate coherence.



**Figure 4: Quick Coherence technique while client was sitting up**

To help her with diaphragmatic breathing, I had Ashley lie down on a couch as she did the “Neutral” technique. There was immediate and significant improvement (**See Figure 5**) in her coherence ratios and in the range of her HRV as she could more easily regulate her breathing lying down.

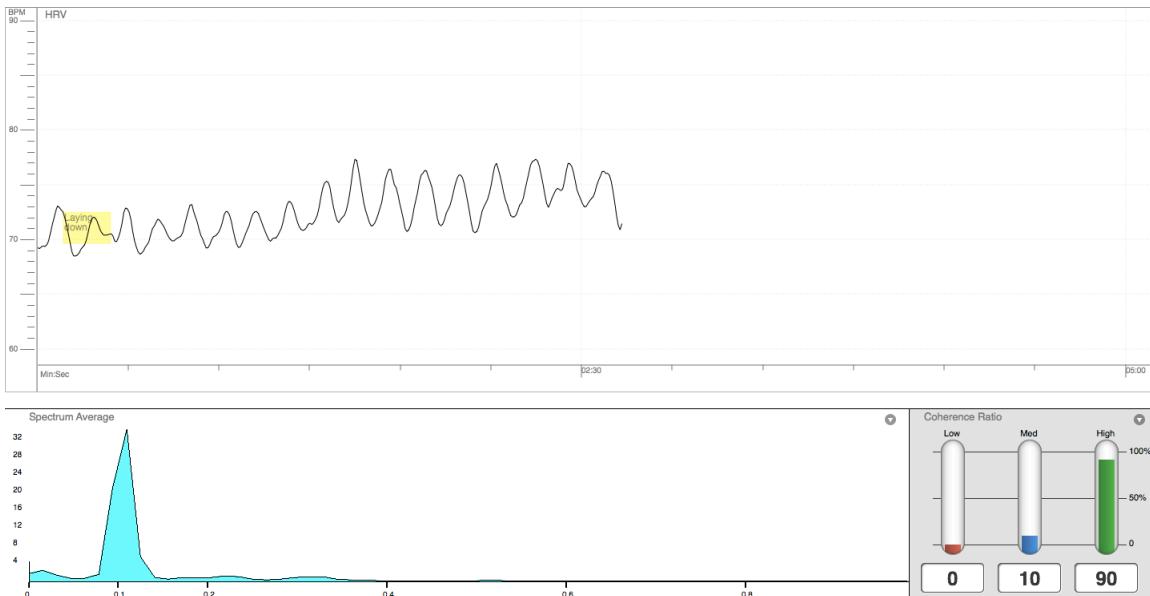


Figure 5: Neutral technique while client was lying down

In order to improve her breathing in a sitting position, Ashley's homework was to sit properly on her sitting bones with shoulders back so that her breathing mechanics could improve, and thus increase her coherence ratio.

### Session #3: May 2015

Today I introduced Ashley to the “Quick Coherence” technique and we discussed the “Depletion to Renewal Plan.” Ashley responded well to the QC technique and liked the visual of breathing in and out through her heart.

As we discussed the Depletion to Renewal grid, Ashley reported that for much of her waking time she was finding herself either frustrated or anxious. For that reason, she marked herself as firmly located in the upper left quadrant of the Depletion to Renewal grid. Her frustrations stemmed from many sources: unresolved legal issues, pain and limitations in her hip and shoulder, difficulties with S-T recall, and a general inability to be able to handle the many complex tasks that she used to be able to handle with ease before her automobile accident.

When asked where she would like to be on the grid, she chose the lower R-hand quadrant. She said that ease and contentment would be very welcome in her life because she rarely experienced them anymore.

As a result of her good work ethic, Ashley significantly increased her coherence over a two-week period (**Figure 4 vs. Figure 6**). **Figure 6** reflects the progress that Ashley had made by working with her posture and her breath since our last meeting. She reported that she had no idea of how much tension she was unconsciously carrying in her upper arms, shoulder, and neck.

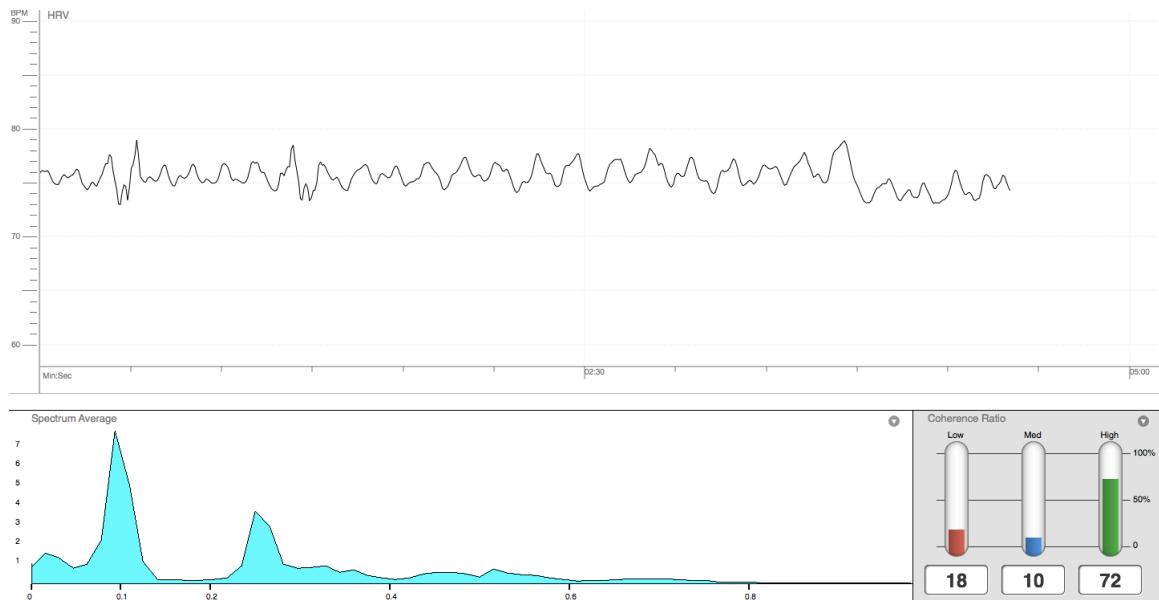


Figure 6: Client sitting down

### Session #4: June 2015

Today, in an effort to show Ashley the many interesting ways to use HM technology, I introduced her to the “Garden Game.” She found it fascinating and although she had similar coherence ratios when compared to her last session, the amplitude of her HRV increased which increased her overall coherence (See Figure 7). It also helped to illustrate the difference between relaxation and coherence by showing that coherence can be achieved while in an active state.

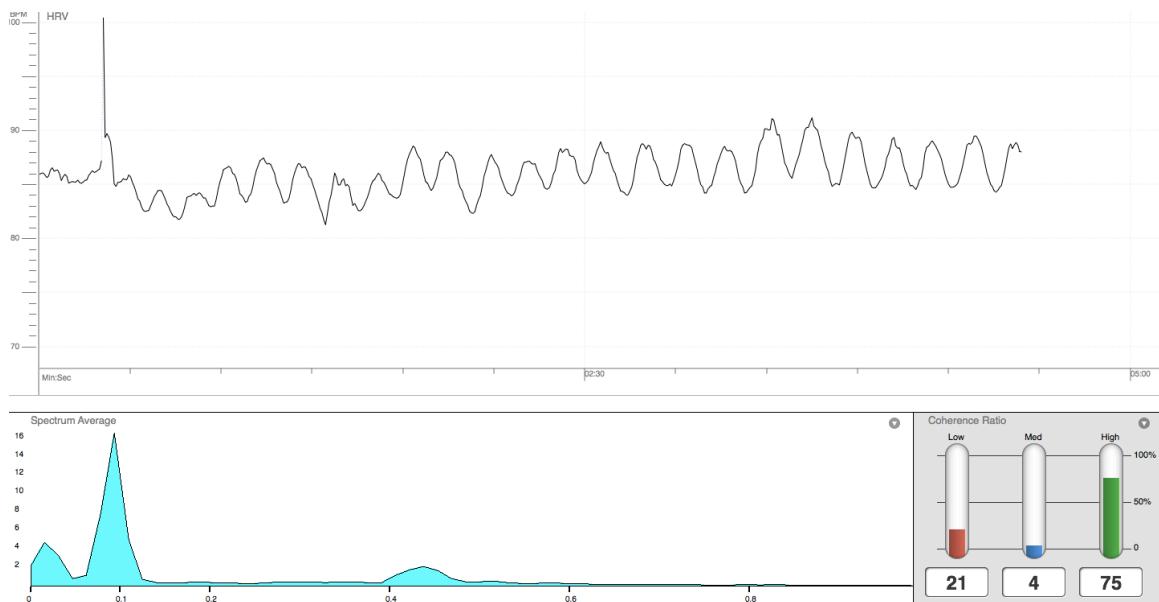
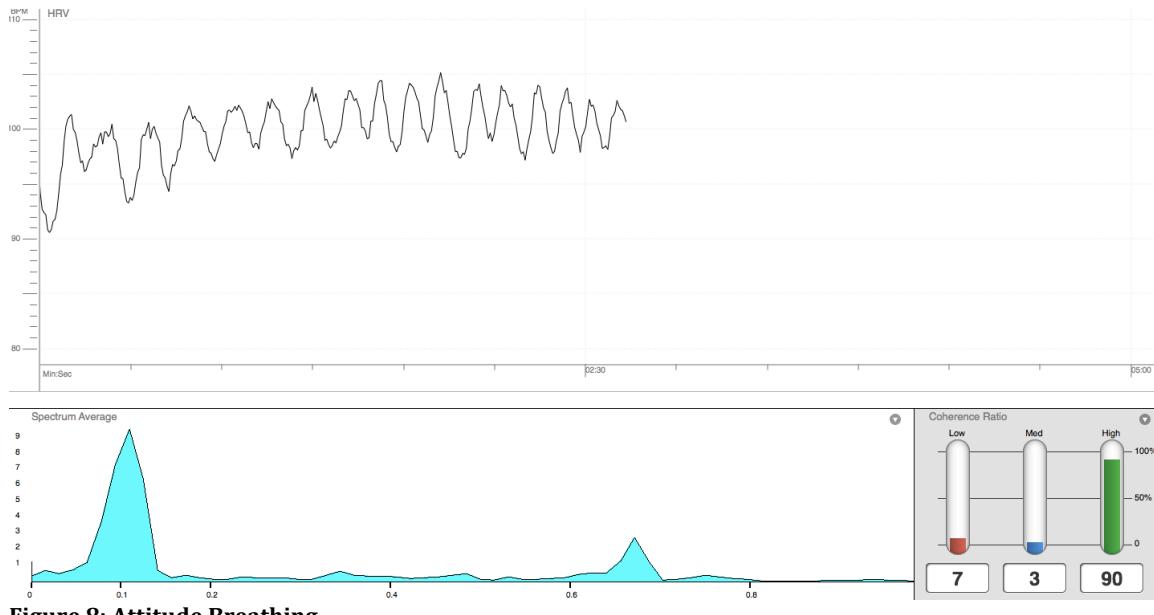


Figure 7: Sitting

## Session #8: July 2015

Today I worked with Ashley to teach her how to do "Attitude Breathing." She was open to this concept and we worked to instill several positive emotions to replace the negative ones, which were so commonplace for her. She was able to feel a physical shift within as she tried this technique, which further strengthened her sense of empowerment. **Figure 8** below shows the results of this focus.



**Figure 8: Attitude Breathing**

## Session #10: August 2015

Because of her brain injury, Ashley has a demanding schedule of keeping her many medical and legal appointments (often as many as 8 a week) and carrying out the assignments that each practitioner gives her. As a result, Ashley's focus tends to be on what she needs to do for her own recovery. This has led to a primary focus on *her* needs, which has been very unsettling for her.

Before the accident, Ashley had been very independent. However, due to the aftermath of her accident, she now depends on others as she works her own recovery. As a result, not only does she feel badly that she's having to rely on so many others, but also frustrated and sad that she can't "do" for others as she has done for most of her life. She is a natural caregiver who has to learn how to receive from others. It is one of her biggest challenges.

To that end, I introduced Ashley to the "Heart Lock-In" technique. She really liked this technique because it gave her a way to "send energy and love" to others and to focus on the things she is grateful for in her life. She also used this technique as a way to begin to forgive herself (even though the accident was not her fault) for her

part in the accident, i.e., “even though the light was green, if I had looked both ways I could have avoided the accident.”

## Session #11: September 2015

Ashley finally got approval for purchasing her EmWave2 and is practicing regularly. **Figure 9** illustrates the significant improvement in 5 months in her ability to bring coherence into her daily life.

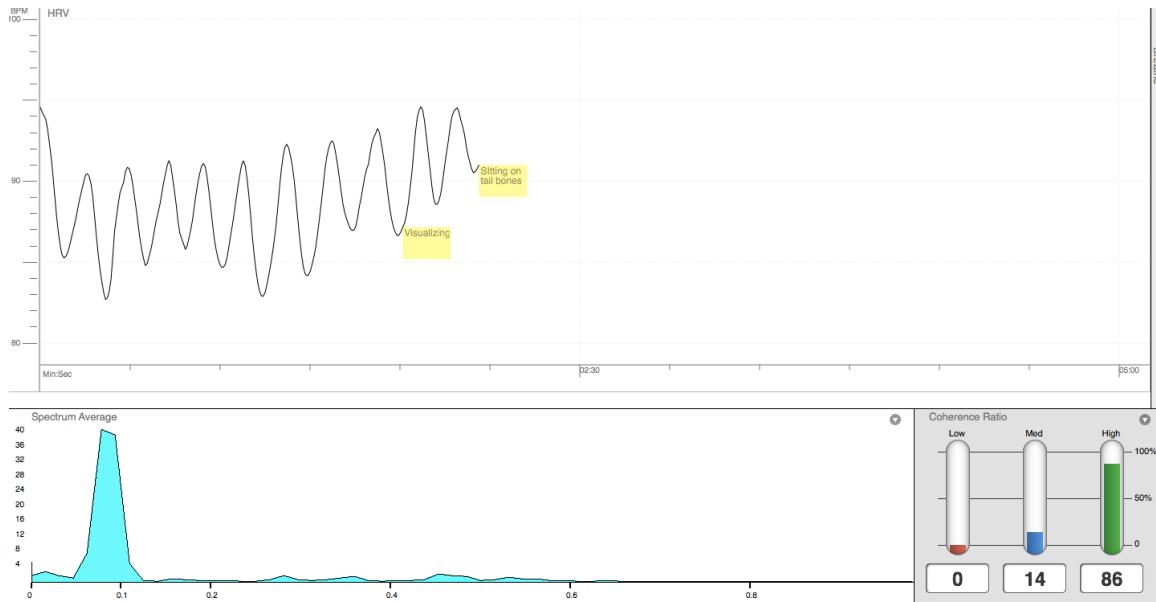


Figure 9: In-office assessment after self-practice on her EmWave2.

## Session #12: September 2015

I recently bought a framed poster and placed it on the wall in my office. It said, “YOU MATTER.” Within the letters were myriad images and inspirational photos. Ashley used that poster as her focal point today and achieved her first “in office” coherence ratio of 100% (**See Figure 10**). She was very pleased (as was I) and she feels as though the work we have done with the HM techniques and HM technology has made an incredible difference in her recovery.

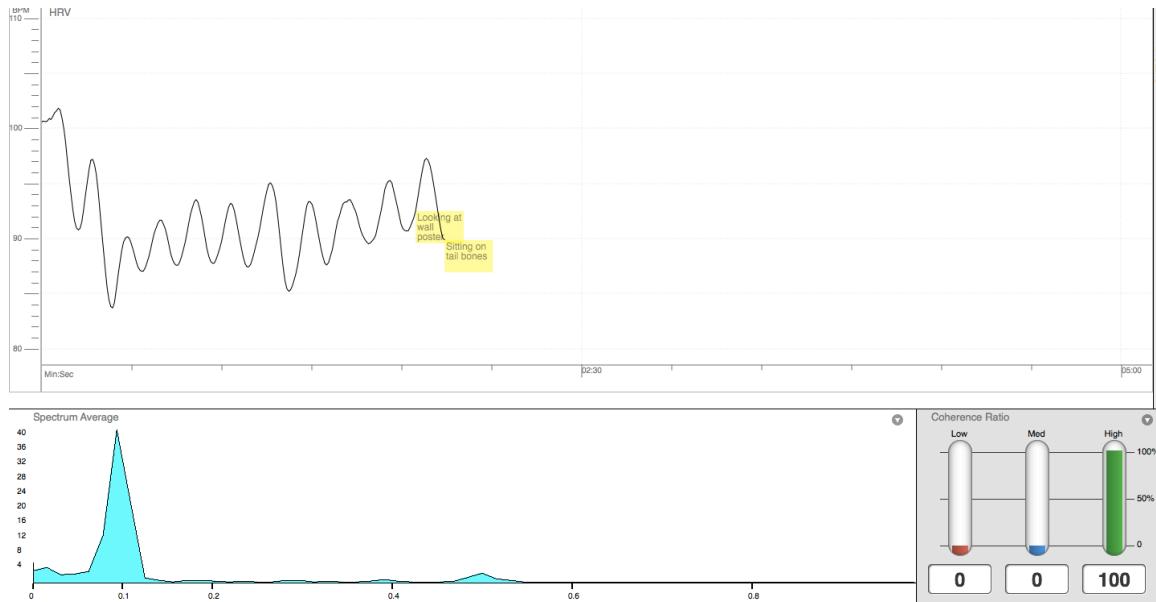


Figure 10: Last documented session

## Discussion

A recent and more comprehensive Neuropsychological evaluation reflects significant brain injury, reflecting a probable drop of 30 points in Ashley's IQ. In addition to the daily challenges she faces as a result of this life-changing injury, she is also coping with: the loss of her career; being separated from her husband by three hours so she can be in a larger city to access needed medical care; needing a family member to live with her until she can finally reunite with her husband; recovering from reconstructive shoulder surgery; dealing with intense and frequent migraines; constant hip pain; and many requests from the legal system for documentation, depositions, and interviews, which often serve to re-traumatize her as she "re-lives" the accident.

Although she still struggles greatly with driving on the interstate (because of the prevalence of tractor trailers), she now has powerful tools to help her maintain higher levels of coherence when driving and when faced with other challenging situations in her life. In effect, she has greatly strengthened her **personal resilience**.

As a practitioner, HeartMath has been a godsend in working with Ashley because the technology provided me with a way to help her "see" what was happening in her central nervous system. It gave her a "hands-on" tool through which she could begin to regain control over her life, albeit, a very different life. It initiated a process of empowerment that increased over time as she gained confidence through demonstrated improvement.

