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Clinical Neuropsychological Services • Cognitive Rehabilitation • Psychotherapy

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### Neuropsychological Evaluative Comparison

Name: [REDACTED] Status: Outpatient HBOT Patient  
Date of Birth: [REDACTED] Age: 22  
Dates of Contact: 20 October, 13 November 2009  
Date of This Note: 2 December 2009

[REDACTED] was seen in conjunction with his one-month hyperbaric treatment of traumatically brain injured serviceman conducted through Cralle Physical Therapy Services, P.A. [REDACTED] had been seen to determine neurocognitive and psychological test performances pre- and post- hyperbaric treatments.

#### Referral and Background:

I saw [REDACTED] at Cralle Physical Therapy Services in our first visit and in my Plantation office for the second visit. He was driven to the second appointment by his mother who picked him up.

[REDACTED] is a right-handed veteran of the Iraq War. He was born and raised in Louisiana. He graduated high school and denied ever having been told he had a learning disability, attention deficit disorder, and was never once held back a grade. He claimed that he was an Honor Roll and Principal's List student.

He informed me that he joined the Army at age 17 and suffered multiple blast injuries in Iraq including some 46 separate IED blasts, 16 RPG blasts and four grenade blasts resulting in two losses of consciousness up to a minute long each. He denied any other history of loss of consciousness or head injury in his life. He denied any history of surgeries. He informed me that he was evaluated neuropsychologically some two years ago and that it is his understanding that he has been diagnosed with a Major Depressive Disorder, Posttraumatic Stress Disorder, Pseudoseizure Disorder and a Conversion Disorder. [REDACTED] also reported having been diagnosed with tinnitus. He denied any history of surgeries or serious infectious illness. He denied any other medical issues. He is medically retired with a 70% disability rating.

[REDACTED] believed in our first meeting that he gets frustrated very easily nowadays, that he has painful frequent headaches and that he is very depressed with posttraumatic nightmares four times a week.

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He was psychiatrically institutionalized twice while in the Army: (1) in September 2007 for hearing voices for which he spent 12 days in the psychiatric hospital and (2) in December 2008 for a suicide attempt during which he took 35 Trazadone 5 mg. [redacted] stated that by December 2008 that he had stopped hearing voices but that he had now gotten "tired" of his nightmares and problems sleeping and feeling worthless to his unit. He had felt he was worthless as a soldier after having been put in a "Wounded Warrior" unit.

He has just begun treatment at Houston VAMC and stated he will be neuropsychologically evaluated 17 November 2009. He stated that he had a previous neuropsychological evaluation two years ago but that he did not believe that he'd been too cooperative then because he was not in a state of mind then to do this testing. This testing was given him soon after he'd returned and before he attempted suicide. He had some suicidal ideations in our first meeting but swore then that he would not attempt again.

He was taking Effexor, Risperdal, Remeron and Topamax in both the meetings with no changes in his medication regimen during this month.

On his return from Iraq he engaged in a two-month period of drinking a fifth of bourbon every day for two months eventually causing him to enter an alcohol program. He is currently in Alcoholics Anonymous.

On 13 November, [redacted] stated that he was now feeling better after nearly 40 Hyperbaric dives. He feels his headaches are less frequent and less painful, he feels less depressed and has not had any nightmares in three weeks. Prior to the hyperbaric treatment he had been having nightmares four times a week and half of these would "ruin a day." He feels more energetic and with better appetite.

He was to return home to Texas 14 November 2009.

**TESTS ADMINISTERED:**

Medical Symptom Validity Test (MSVT); State-Trait Anxiety Inventory (STAI); Beck Depression Inventory - II (BDI-II); PTSD Checklist - Civilian Version (PCL-C); Neuropsychological Assessment Battery Form 2 (Attention, Language, Spatial, Memory, Executive Modules); Personality Assessment Inventory (PAI).

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For the purposes of interpretation and communicating results, the following descriptors will be used:

Very Superior	130 and above; above 98 <sup>th</sup> percentile
Superior	120 to 129; 91 <sup>st</sup> - 97 <sup>th</sup> percentile
High Average	110 to 119; 75 <sup>th</sup> - 90 <sup>th</sup> percentile
Average	90 to 109; 25 <sup>th</sup> - 73 <sup>rd</sup> percentile
Below Average	80 to 89; 9 <sup>th</sup> - 23 <sup>rd</sup> percentile
Borderline	70 to 79; 2 <sup>nd</sup> - 8 <sup>th</sup> percentile
Extremely Low	69 and below; .01 <sup>st</sup> - 2 <sup>nd</sup> percentile

Note: standard scores have a mean of 100 and standard deviation of 15

The same set of tests indicated above were administered each testing date (T1: 20 October 2009 & T2: 13 November 2009). For the purposes of determining whether performances from examination date T1 were significantly different on T2, the following conventions were used:

Difference of between 10 and 15 points: significant difference  
 Difference of greater than 15 points: very significant difference

**Mood:** Very significantly less depressed, less anxious and less severe PTSD symptoms by test date #2. BDI-II total scored decreased from a raw score of 31 points at T1 to only 14 points by T2 (very significant decline). Similarly, STAI-State score diminished from a raw score of 50 points (T1) to 40 points (T2) for a significant decline and STAI-Trait score declined from 65 points at T1 to 48 points at T2. His PCL-C score (measuring Posttraumatic Stress Disorder) diminished from a raw score of 68 at T1 to 40 at T2 indicating significantly improved PTSD symptoms. His PAI scores (see *Appendix*) indicated significant decline in depression, anxiety and posttraumatic stress scores from T1 to T2.

#### Cognitive Functioning:

### NAB Index Score Summary Table at T1

Module Index	Standard Score	Percentile Rank	Confidence Interval 95%	Interpretive Category
Attention Index (ATT)	101	53	93 - 109	Average
Language Index (LAN)	135	99	122 - 148	Very superior
Memory Index (MEM)	96	39	88 - 104	Average
Spatial Index (SPT)	112	79	102 - 122	Above average
Executive Functions Index (EXE)	113	81	103 - 123	Above average
<b>Total NAB Index (T-NAB)</b>	<b>115</b>	<b>84</b>	<b>109 - 121</b>	<b>Superior</b>

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## NAB Index Score Summary Table at T2

Module Index	Standard Score	Percentile Rank	Confidence Interval 95%	Interpretive Category
Attention Index (ATT)	107	68	99 - 115	Above average
Language Index (LAN)	145	99.87	132 - 158	Very superior
Memory Index (MEM)	116	86	108 - 124	Superior
Spatial Index (SPT)	105	63	95 - 115	Average
Executive Functions Index (EXE)	110	75	100 - 120	Above average
<b>Total NAB Index (T-NAB)</b>	<b>122</b>	<b>93</b>	<b>116 - 128</b>	<b>Superior</b>

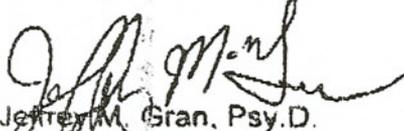
A comparison of Module Index scores from T1 to T2 indicates that Attention improved 6 points (No Significant Difference); Language Improved 10 points (Significant improvement); Memory improved 20 points (Very Significant improvement); Spatial Functioning declined 7 points (No Significant Difference) and Executive Functioning declined 3 points (No Significant Difference).

A listing of specific module tests as performed and compared from T1 to T2 can be found in this report's *Appendix*.

### Summary:

It is found that test performances indicate the following from the first testing to the second testing:

- Very significantly lessened depression.
- Very significantly lessened anxiety.
- Very significantly lessened Posttraumatic Stress Symptoms including reported absence of nightmares (had been four times a week at T1 and had been absent for three weeks at T2).
- Significantly improved language functioning.
- Very significantly improved memory functioning.
- Attention, spatial and executive functioning roughly equivalent to T1 baseline levels by the time of T2.

  
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