

## Additional File 1

### Re-Analysis of All Variables by Green Pass/Fail

The following table summarizes the pre-to-post-HBOT changes in all numerical variables, for all affected subjects, for those who passed the WMT, and for those who failed the WMT. Changes are summarized in the format:

Mean  $\pm$  Standard Deviation (# of Subjects)

Median (Minimum – Maximum)

p value for significance of change, by the parametric 1-sample Student t test

For variables measured at only one time point (like Age), the p-value line is not present. The p values in the rightmost column indicate whether the mean values or changes were significantly different between subjects who passed and those who failed the WMT, by the unequal-variance Welch t test.

Significant p values ( $p \leq 0.05$ ) are highlighted in red; near-significant values ( $p < 0.10$ ) are highlighted in orange.

Variable	All Subjects	Subjects Who Passed WMT	Subjects Who Failed WMT	p-value Pass vs. Fail
Age	30.4 ± 7.5 (29) 29 (21 – 51)	29.9 ± 7.6 (25) 29 (21 – 51)	33.5 ± 7.2 (4) 36 (23 – 39)	0.381
MoSvc	72 ± 73 (29) 42 (9 – 300)	75 ± 77 (25) 42 (9 – 300)	54 ± 37 (4) 48 (18 – 103)	0.603
PriorTBI	1.28 ± 2.14 (29) 1 (0 – 10)	1.48 ± 2.24 (25) 1 (0 – 10)	0.00 ± 0.00 (4) 0 (0 – 0)	0.204
Blasts	4.5 ± 6.3 (29) 2 (1 – 25)	4.8 ± 6.8 (25) 1 (1 – 25)	2.8 ± 1.7 (4) 2.5 (1 – 5)	0.566
Delay	3.35 ± 1.21 (29) 3.25 (1.25 – 5.83)	3.16 ± 1.17 (25) 3.08 (1.25 – 5.83)	4.56 ± 0.77 (4) 4.71 (3.5 – 5.33)	<b>0.029</b>
Tobacco	0.27 ± 0.50 (29) 0 (0 – 2)	0.31 ± 0.53 (25) 0 (0 – 2)	0.03 ± 0.05 (4) 0 (0 – 0.1)	0.297
Educ	13.02 ± 2.01 (29) 12 (9 – 19)	12.98 ± 2.10 (25) 12 (9 – 19)	13.25 ± 1.50 (4) 13 (12 – 15)	0.808
HBOTn	39.72 ± 0.65 (29) 40 (38 – 40)	39.76 ± 0.60 (25) 40 (38 – 40)	39.50 ± 1.00 (4) 40 (38 – 40)	0.467
HBOTd	30.9 ± 4.5 (29) 30 (23 – 44)	31.3 ± 4.7 (25) 30 (23 – 44)	28.3 ± 1.3 (4) 28 (27 – 30)	0.218
GreenIR	89.2 ± 12.1 (29) 90 (58 – 100)	93.2 ± 6.6 (25) 95 (80 – 100)	64.0 ± 6.7 (4) 62.5 (58 – 73)	<b>&lt; 0.001</b>
GreenDR	88.6 ± 11.6 (29) 93 (60 – 100)	92.3 ± 7.0 (25) 93 (75 – 100)	65.3 ± 4.6 (4) 65.5 (60 – 70)	<b>&lt; 0.001</b>
GreenCNS	85.6 ± 13.8 (29) 88 (55 – 100)	89.9 ± 8.9 (25) 90 (73 – 100)	58.8 ± 4.8 (4) 57.5 (55 – 65)	<b>&lt; 0.001</b>
GreenMC	77.5 ± 18.1 (29) 85 (40 – 100)	81.9 ± 15.2 (25) 85 (50 – 100)	50.0 ± 8.2 (4) 50 (40 – 60)	<b>&lt; 0.001</b>
GreenFR	51.9 ± 21.9 (29) 48 (13 – 100)	55.5 ± 21.0 (25) 53 (20 – 100)	29.5 ± 13.7 (4) 30 (13 – 45)	<b>0.025</b>
AMI	2.8 ± 11.9 (24) 5.5 (-26 – 22) p = 0.264	2.4 ± 11.9 (21) 6 (-26 – 19) p = 0.361	5.3 ± 14.6 (3) -1 (-5 – 22) p = 0.591	0.703
VMI	3.9 ± 13.8 (24) 3 (-30 – 30) p = 0.177	3.7 ± 14.7 (21) 3 (-30 – 30) p = 0.260	5.3 ± 4.9 (3) 3 (2 – 11) p = 0.202	0.854
VWMI	6.8 ± 10.0 (24) 7.5 (-18 – 25) <b>p = 0.003</b>	7.3 ± 10.1 (21) 8 (-18 – 25) <b>p = 0.004</b>	3.7 ± 10.0 (3) 0 (-4 – 15) p = 0.591	0.569
DMI	5.7 ± 12.0 (24) 5.5 (-21 – 26) <b>p = 0.029</b>	5.9 ± 12.1 (21) 6 (-21 – 26) <b>p = 0.039</b>	4.3 ± 12.9 (3) -1 (-5 – 19) p = 0.618	0.842

Variable	All Subjects	Subjects Who Passed WMT	Subjects Who Failed WMT	p-value Pass vs. Fail
IQ	14.2 ± 10.3 (29) 15 (-9 – 47) <b>p &lt; 0.001</b>	12.4 ± 8.5 (25) 12 (-9 – 30) <b>p &lt; 0.001</b>	25.3 ± 14.7 (4) 19 (16 – 47) <b>p = 0.041</b>	<b>0.018</b>
DelWMS	15.2 ± 13.9 (29) 17 (-19 – 38) <b>p &lt; 0.001</b>	15.4 ± 13.7 (25) 17 (-19 – 38) <b>p &lt; 0.001</b>	13.5 ± 17.1 (4) 10.5 (-3 – 36) p = 0.213	0.800
WrkWMS	11.3 ± 10.5 (29) 10 (-15 – 32) <b>p &lt; 0.001</b>	11.3 ± 10.7 (25) 10 (-15 – 32) <b>p &lt; 0.001</b>	11.5 ± 10.3 (4) 6.5 (6 – 27) p = 0.113	0.975
Stroop	10.9 ± 12.2 (29) 10 (-10 – 39) <b>p &lt; 0.001</b>	9.6 ± 11.4 (25) 10 (-10 – 29) <b>p &lt; 0.001</b>	19.0 ± 15.3 (4) 17.5 (2 – 39) <b>p = 0.090</b>	0.154
TOVAVar	8.6 ± 25.3 (29) 8 (-70 – 48) <b>p = 0.078</b>	6.1 ± 25.5 (25) 3 (-70 – 45) p = 0.243	24.3 ± 19.9 (4) 24.5 (0 – 48) <b>p = 0.093</b>	0.189
QOL	28 ± 32 (29) 24 (-37 – 96) <b>p &lt; 0.001</b>	28 ± 33 (25) 24 (-37 – 96) <b>p &lt; 0.001</b>	28 ± 35 (4) 18 (-3 – 77) p = 0.212	0.978
PHQ9Dep	-7.9 ± 6.8 (29) -7 (-21 – 5) <b>p &lt; 0.001</b>	-7.5 ± 6.9 (25) -6 (-21 – 5) <b>p &lt; 0.001</b>	-10.3 ± 6.2 (4) -13 (-14 – -1) <b>p = 0.046</b>	0.465
GAD7Anx	-5.4 ± 5.9 (29) -5 (-14 – 4) <b>p &lt; 0.001</b>	-5.2 ± 5.9 (25) -5 (-14 – 4) <b>p &lt; 0.001</b>	-6.8 ± 7.3 (4) -6.5 (-14 – 0) p = 0.160	0.646
CogPBN	20.4 ± 17.4 (29) 15 (-10 – 50) <b>p &lt; 0.001</b>	20.6 ± 18.3 (25) 15 (-10 – 50) <b>p &lt; 0.001</b>	19.5 ± 11.4 (4) 17.5 (8 – 35) <b>p = 0.042</b>	0.909
PhysPBN	20.7 ± 16.2 (29) 20 (-10 – 55) <b>p &lt; 0.001</b>	19.8 ± 17.1 (25) 20 (-10 – 55) <b>p &lt; 0.001</b>	26.3 ± 7.5 (4) 25 (20 – 35) <b>p = 0.006</b>	0.469
EmoPBN	31.1 ± 18.9 (29) 30 (5 – 80) <b>p &lt; 0.001</b>	30.8 ± 19.2 (25) 30 (5 – 80) <b>p &lt; 0.001</b>	32.5 ± 18.9 (4) 25 (20 – 60) <b>p = 0.041</b>	0.874
Inatt	8.0 ± 27.8 (29) 0 (-62 – 61) p = 0.134	7.7 ± 29.7 (25) 0 (-62 – 61) p = 0.206	9.5 ± 11.2 (4) 8 (0 – 22) p = 0.190	0.908
Impls	11.9 ± 20.2 (29) 8 (-25 – 60) <b>p = 0.004</b>	14.1 ± 20.6 (25) 15 (-25 – 60) <b>p = 0.002</b>	-2.3 ± 10.7 (4) 2 (-18 – 5) p = 0.703	0.135
RxTm	3.5 ± 18.2 (29) 5 (-32 – 43) p = 0.312	1.5 ± 18.6 (25) 3 (-32 – 43) p = 0.695	16.0 ± 9.1 (4) 13.5 (8 – 29) <b>p = 0.039</b>	0.142

Variable	All Subjects	Subjects Who Passed WMT	Subjects Who Failed WMT	p-value Pass vs. Fail
TapD	6.4 ± 16.0 (29) 5 (-20 – 68) <b>p = 0.040</b>	6.2 ± 16.8 (25) 5 (-20 – 68) <b>p = 0.077</b>	7.8 ± 11.3 (4) 3.5 (0 – 24) p = 0.265	0.861
TapND	4.5 ± 14.7 (29) 1 (-18 – 57) p = 0.111	3.2 ± 14.8 (25) 0 (-18 – 57) p = 0.297	12.8 ± 12.1 (4) 9 (3 – 30) p = 0.126	0.231
PegD	11.2 ± 13.9 (29) 9 (-14 – 33) <b>p &lt; 0.001</b>	11.0 ± 14.2 (25) 9 (-14 – 33) <b>p &lt; 0.001</b>	12.5 ± 13.4 (4) 9.5 (0 – 31) p = 0.160	0.841
PegND	4.2 ± 13.6 (29) 3 (-30 – 36) p = 0.105	2.7 ± 12.1 (25) 3 (-30 – 25) p = 0.281	14.0 ± 20.2 (4) 13 (-6 – 36) p = 0.260	0.125
Parag	-0.9 ± 4.6 (29) -1 (-14 – 8) p = 0.324	-0.8 ± 4.9 (25) 0 (-14 – 8) p = 0.449	-1.5 ± 2.1 (4) -1.5 (-4 – 1) p = 0.245	0.772
RPCSQ	-13.5 ± 10.4 (29) -13 (-38 – 12) <b>p &lt; 0.001</b>	-13.7 ± 11.0 (25) -13 (-38 – 12) <b>p &lt; 0.001</b>	-12.5 ± 7.0 (4) -13.5 (-20 – -3) <b>p = 0.038</b>	0.838
PCLM	-16.6 ± 16.2 (29) -16 (-54 – 10) <b>p &lt; 0.001</b>	-15.8 ± 16.5 (25) -15 (-54 – 10) <b>p &lt; 0.001</b>	-21.5 ± 15.0 (4) -24.5 (-36 – -1) <b>p = 0.064</b>	0.525
LG030	-0.39 ± 1.59 (29) -0.14 (-3.96 – 2.5) p = 0.198	-0.27 ± 1.62 (25) -0.04 (-3.96 – 2.5) p = 0.414	-1.13 ± 1.29 (4) -0.69 (-3.03 – -0.14) p = 0.177	0.322
LG060	-0.69 ± 1.23 (29) -0.86 (-2.7 – 2.27) <b>p = 0.005</b>	-0.72 ± 1.28 (25) -0.86 (-2.7 – 2.27) <b>p = 0.009</b>	-0.50 ± 1.03 (4) -0.47 (-1.48 – 0.44) p = 0.407	0.740
LG090	-0.09 ± 1.75 (29) 0 (-3.71 – 3.66) p = 0.779	0.04 ± 1.79 (25) 0.14 (-3.71 – 3.66) p = 0.904	-0.94 ± 1.39 (4) -1 (-2.48 – 0.71) p = 0.267	0.304
LG120	-0.27 ± 2.12 (29) -0.8 (-3.33 – 4.54) p = 0.491	-0.52 ± 2.01 (25) -0.91 (-3.33 – 4.54) p = 0.213	1.23 ± 2.45 (4) 2.32 (-2.43 – 2.7) p = 0.390	0.129
LG150	-0.47 ± 2.21 (29) 0.19 (-4.6 – 3.55) p = 0.265	-0.43 ± 2.23 (25) 0.19 (-4.6 – 3.55) p = 0.341	-0.68 ± 2.40 (4) 0.04 (-3.96 – 1.18) p = 0.613	0.842
LGAll	-0.38 ± 0.95 (29) -0.57 (-2.27 – 1.66) <b>p = 0.039</b>	-0.38 ± 0.92 (25) -0.59 (-1.93 – 1.66) <b>p = 0.051</b>	-0.40 ± 1.29 (4) 0.07 (-2.27 – 0.5) p = 0.575	0.962
LW060	-0.54 ± 2.75 (29) -0.7 (-7.97 – 4.85) p = 0.303	-0.68 ± 2.84 (25) -0.7 (-7.97 – 4.85) p = 0.241	0.38 ± 2.18 (4) -0.33 (-1.36 – 3.54) p = 0.749	0.481

Variable	All Subjects	Subjects Who Passed WMT	Subjects Who Failed WMT	p-value Pass vs. Fail
LW120	-1.06 ± 2.74 (29) -0.87 (-6.12 – 4.88) <b>p = 0.046</b>	-1.23 ± 2.80 (25) -1.73 (-6.12 – 4.88) <b>p = 0.038</b>	-0.02 ± 2.39 (4) 0.77 (-3.4 – 1.8) p = 0.989	0.421
LWAI	-0.80 ± 2.23 (29) -0.79 (-5.26 – 3.11) <b>p = 0.064</b>	-0.96 ± 2.27 (25) -1.06 (-5.26 – 3.11) <b>p = 0.046</b>	0.18 ± 1.88 (4) 0.12 (-2.05 – 2.54) p = 0.858	0.352
RG030	-0.28 ± 1.52 (29) -0.57 (-3.84 – 3.19) p = 0.333	-0.18 ± 1.23 (25) -0.36 (-2.32 – 1.81) p = 0.483	-0.92 ± 2.96 (4) -1.51 (-3.84 – 3.19) p = 0.579	0.374
RG060	-0.40 ± 1.33 (29) -0.51 (-2.7 – 3.38) p = 0.114	-0.23 ± 1.33 (25) -0.38 (-2.7 – 3.38) p = 0.400	-1.49 ± 0.70 (4) -1.47 (-2.37 – -0.67) p = 0.023	<b>0.077</b>
RG090	0.08 ± 1.32 (29) 0.04 (-3.53 – 3.35) p = 0.736	0.10 ± 0.96 (25) 0.04 (-2.03 – 2.37) p = 0.614	-0.01 ± 2.97 (4) 0.06 (-3.53 – 3.35) p = 0.994	0.881
RG120	-0.06 ± 1.80 (29) 0.05 (-4.63 – 2.75) p = 0.851	-0.26 ± 1.79 (25) -0.2 (-4.63 – 2.75) p = 0.476	1.16 ± 1.47 (4) 1.32 (-0.75 – 2.75) p = 0.212	0.144
RG150	-0.32 ± 1.35 (29) -0.46 (-2.84 – 1.97) p = 0.217	-0.45 ± 1.30 (25) -0.64 (-2.84 – 1.97) <b>p = 0.096</b>	0.52 ± 1.57 (4) 1.11 (-1.76 – 1.61) p = 0.556	0.188
RGAI	-0.20 ± 0.59 (29) -0.3 (-1.25 – 0.91) <b>p = 0.087</b>	-0.20 ± 0.61 (25) -0.17 (-1.25 – 0.91) p = 0.111	-0.15 ± 0.52 (4) -0.32 (-0.58 – 0.62) p = 0.612	0.867
RW060	-1.19 ± 2.92 (29) -1.25 (-6.92 – 5.58) <b>p = 0.037</b>	-0.84 ± 2.87 (25) -0.79 (-6.92 – 5.58) p = 0.157	-3.36 ± 2.51 (4) -3.06 (-6.58 – -0.73) <b>p = 0.075</b>	0.110
RW120	-0.42 ± 2.73 (29) 0.1 (-4.6 – 5.55) p = 0.413	-0.41 ± 2.81 (25) -0.31 (-4.6 – 5.55) p = 0.473	-0.50 ± 2.55 (4) 0.53 (-4.25 – 1.21) p = 0.722	0.953
RWAI	-0.80 ± 2.30 (29) -1.03 (-4.59 – 4.28) <b>p = 0.070</b>	-0.62 ± 2.35 (25) -1.03 (-4.59 – 4.28) p = 0.196	-1.93 ± 1.83 (4) -1.67 (-4.07 – -0.31) p = 0.125	0.301

**Abbreviations: MoSvc: Months of Service; PriorTBI: Prior Traumatic Brain Injury (number); Educa: Education (years); HBOTn: Hyperbaric Oxygen Therapy (total number); HBOTd: Hyperbaric Oxygen Therapy (total calendar days); GreenIR: Green Word Memory Test Immediate Recognition; GreenDR: Green Word Memory Test Delayed Recognition; GreenCNS: Green Word Memory Test Consistency; GreenMC: Green Word Memory Test Multiple Choice; GreenFR: Green Word Memory Test Free Recall; AMI: Auditory Memory Index; VMI: Visual Memory Index; VWMI: Visual Working Memory Index; DMI: Delayed Memory Index; IQ: Intelligence Quotient; DelWMS:**

**Delayed Wechsler Memory Scale; WrkWMS: Working Wechsler Memory Scale; TOVAVar: Test of Variables of Attention Variability; QOL: Quality of Life; PHQ9Dep: Personal Health Questionnaire 9 Depression; GAD7Anx: General Anxiety Disorder 7 Anxiety; CogPBN: Cognitive Percent Back to Normal; PhysPBN: Physical Percent Back to Normal; EmoPBN: Emotional Percent Back to Normal; Inatt: TOVA Inattention; Impls: TOVA Impulsivity; RxTm: TOVA Reaction Time; TapD: Finger Tapping Dominant Hand; TapND: Finger Tapper Non-Dominant Hand; PegD: Grooved PegBoard Dominant Hand; PegND: Grooved PegBoard Non-Dominant Hand; Parag: Rivermead Paragraph Memory Test; RPCSQ: Rivermead Post-Concussion Symptom Questionnaire; PCLM: Post-Traumatic Stress Disorder Checklist Military; LG: Left Hemisphere Gray Matter Region of Interest; LW: Left Hemisphere White Matter Region of Interest; RG: Right Hemisphere Gray Matter Region of Interest; RW: Right Hemisphere White Matter Region of Interest; 30, 60, 90, 120, 150: 30, 60, 90, 120, 150 degrees from 12:00 on a transverse slice of the SPECT brain imaging.; All: All Regions of Interest in the Gray or White Matter of either Hemisphere.**

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