IntegNeuro Wellness Report

Disclaimer

This report (reference PA 0000 0000, report date 16 Feb 2011) provides indications of subjective state and objective brain function as compared directly or indirectly to a normative database. It is not to be used as a basis for action without consideration by a competent relevant professional. Patients should always seek the advice of a trained health professional or relevant specialist regarding any highlighted variances within this report before any treatment or action is taken.

This report is not intended to be used in any way on its own to diagnose, select treatment or cure any health condition.

This report does not establish any physician-patient relationship or supplant any in-person medical consultation or examination. Patients should always seek appropriate medical attention for specific ailments.

Patients should not disregard professional medical advice or delay seeking medical treatment as a result of findings contained within this report.

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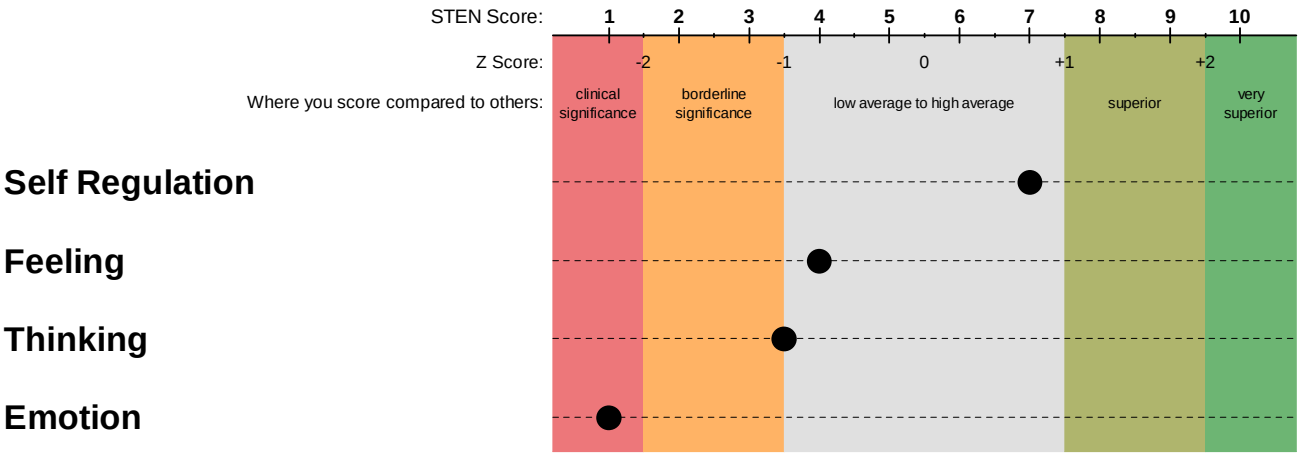
Report Version: IntegNeuro Wellness 3.1.1
Data Version: IntegNeuro 3.1.0

Summary

Unique Identifier:	INW-Sample-01	Test Date:	Apr 2010
Gender:	Female	Birth Date:	withheld

This report brings together information on diagnostic symptoms and Negative Feelings as well as cognitive information on Self Regulation, Thinking and Emotion to support case identification and treatment choices.



Information for Consideration

CASE IDENTIFICATION:

Predisposing risk for a mental health issue:	**Yes** – Moderate likelihood
Negative Feelings:	**Yes** – Present in the significant range
Cognitive Thinking and Emotion markers:	**Yes** – Present in the significant range

MANAGEMENT PLAN:

Referral to specialist: Due to the presence of significant Thinking markers

Medication: Selective serotonin reuptake inhibitor antidepressant medications may be of benefit

Other programs: Consider other programs to complement the treatment plan, and promote engagement

REVIEW:

Review 8 weeks after commencing Management Plan

Summary

Rationale for Information for Consideration

CASE IDENTIFICATION:

Predisposing risk for a mental health issue: Moderate likelihood. The Negativity Bias marker of risk is in the borderline significant range[1,2,3].

Negative Feelings: Present in the significant range:[15]

- Feelings of Anxiety-Stress.

Cognitive Thinking and Emotion markers: Present in the significant range:

- Cognitive difficulties in areas of Emotion (Emotion Identification).
- Cognitive difficulties in additional areas of Thinking (Attention & Concentration, Memory, Executive Function).

MANAGEMENT PLAN:

Referral to specialist

Due to the presence of significant Thinking markers. Thinking markers such as poor Attention & Concentration, Information Processing Efficiency, Memory and Executive Function have been found to predict greater disability in life functioning[9,10,11]. They may also indicate that other conditions are present.

Medication

Selective serotonin reuptake inhibitor antidepressant medications may be of benefit. Significant Emotion markers are present. Emotion difficulties involve the same brain chemicals impacted by antidepressants, and have been found to improve following antidepressant medication[7,8].

Other programs

Consider other programs to complement the treatment plan, and promote engagement. These programs have been found to improve Negative Feelings of Depressed Mood and Anxiety-Stress. For instance:

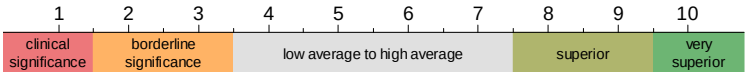
- Supportive Case Management.
- www.MyBrainSolutions.com for 'Thought Challenger' and 'Positive Affirmations' that use evidence-based cognitive behavior therapy techniques[4].

REVIEW:

Review 8 weeks after commencing Management Plan to monitor progress.

Scores on the Markers

STEN scores range from 1 to 10.
Higher scores always indicate better functioning.



Self Regulation – Shaping and planning of our thinking and emotion over time to maximize our well being

MARKER	SCORE	EXPLANATION
Negativity Bias	3	The tendency to see yourself and your world as negative (lower scores) versus positive (higher scores). Associated with sensitivity versus hardiness to daily stresses.
Emotional Resilience	8	Capacity for coping and feeling confident, with self-esteem and self-efficacy.
Social Skills	8.5	Capacity for building and keeping relationships, associated with extraversion and empathy.

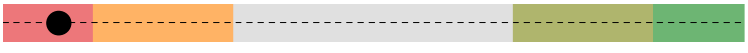
Feeling – Your conscious experience of emotions that relies on feedback from your body reactions

MARKER	SCORE	EXPLANATION
Depressed Mood	4	Ranges from feeling extremely low (lower scores) to an absence of sadness (higher scores).
Anxiety	3	Ranges from feeling extreme worry or panic (lower scores) to an absence of worry (higher scores).
Stress	5	Ranges from feeling extremely irritable and jumpy (lower scores) to feeling calm (higher scores).

Thinking – Selective awareness of information processing so we can know and remember

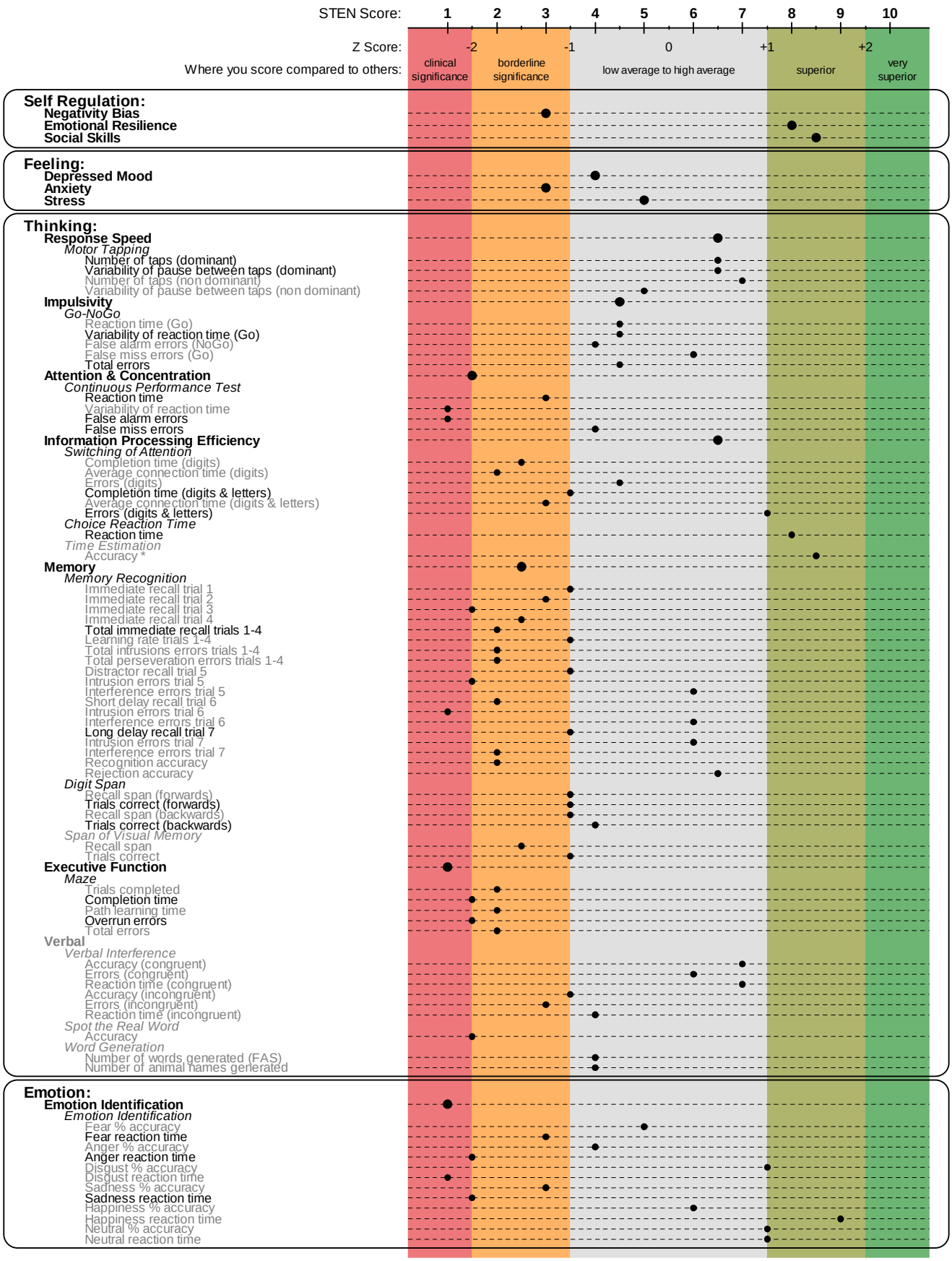
MARKER	SCORE	EXPLANATION
Response Speed	6.5	Psychomotor speed. Ranges from slower response (lower scores) to faster response (higher scores).
Impulsivity	4.5	Balance between responding quickly and suppressing responses as task demands change.
Attention & Concentration	1.5	Concentrating over time and resisting distractions to focus on the main task.
Information Processing Efficiency	6.5	Processing complex information under time demands, which requires a balance of focus and flexibility.
Memory	2.5	Aspects of memory that require learning new information, holding information 'online' and recalling it later.
Executive Function	1	Planning, monitoring and using feedback to adjust and organize behavior to meet goals.

Emotion – Automatic and nonconscious processes that help us minimize danger and maximize reward



MARKER	SCORE	EXPLANATION
Emotion Identification	1	Identification of basic facial expressions of emotion, such as fear and happiness, which reflects our own emotional functioning.

Details of Scores on the Markers



Black text indicates measures making substantial contributions to each marker. Gray text indicates measures providing information that is additional to the markers.
Time Estimation Accuracy (* optimum performance is STEN score of 5.5; score < 5.5 reflects underestimation of time intervals and score > 5.5 reflects overestimation of time intervals).

Details of Scores on the Markers

Measure	Client	Int. Brain Database Average	Int. Brain Database Std. Dev	Z Score	Percentile
Response Speed – Motor Tapping					
Number of taps (dominant)	166	158	22	0.36	64^{th}
Variability of pause between taps (dominant)	23ms	28ms	15ms	0.33	63^{rd}
Number of taps (non dominant)	151	139	21	0.59	72^{nd}
Variability of pause between taps (non dominant)	42ms	38ms	32ms	-0.12	45^{th}
Impulsivity – Go-NoGo					
Reaction time (Go)	291ms	273ms	37ms	-0.49	31^{st}
Variability of reaction time (Go)	74ms	67ms	25ms	-0.27	40^{th}
False alarm errors (NoGo)	3	2.1	1.7	-0.53	30^{th}
False miss errors (Go)	0	0.18	0.76	0.24	59^{th}
Total errors	3	2.3	2	-0.33	37^{th}
Attention & Concentration – Continuous Performance Test					
Reaction time	591ms	488ms	97ms	-1.06	14^{th}
● Variability of reaction time	462ms	135ms	100ms	-3.27	$< 1^{st}$
● False alarm errors	6	1	2.4	-2.1	2^{nd}
False miss errors	2	0.9	1.5	-0.73	23^{rd}
Information Processing Efficiency – Switching of Attention					
Completion time (digits)	26.6s	19s	5.2s	-1.46	7^{th}
Average connection time (digits)	1022ms	686ms	199ms	-1.69	5^{th}
Errors (digits)	1	0.54	0.95	-0.49	31^{st}
Completion time (digits & letters)	52s	41s	12s	-0.93	18^{th}
Average connection time (digits & letters)	2064ms	1538ms	489ms	-1.08	14^{th}
Errors (digits & letters)	0	0.76	0.84	0.9	82^{nd}
Information Processing Efficiency – Choice Reaction Time					
Reaction time	579ms	680ms	93ms	1.09	86^{th}
Information Processing Efficiency – Time Estimation					
Accuracy *	0.21s	-0.05s	0.2s	1.26	

Raw scores of the Cognitive findings (● = statistically significant; Std. Dev = standard deviation; Int. = international).

Time Estimation Accuracy (* optimum performance is a Z Score of 0; a negative Z Score reflects underestimation of time intervals and a positive Z Score reflects overestimation of time intervals).

Details of Scores on the Markers

Measure	Client	Int. Brain Database Average	Std. Dev	Z Score	Percentile
Memory – Memory Recognition					
Immediate recall trial 1	5	6.2	1.4	-0.89	19^{th}
Immediate recall trial 2	7	8.8	1.6	-1.12	13^{th}
Immediate recall trial 3	7	9.9	1.6	-1.83	3^{rd}
Immediate recall trial 4	8	10.7	1.9	-1.43	8^{th}
Total immediate recall trials 1-4	27	35.4	4.8	-1.73	4^{th}
Learning rate trials 1-4	0.9	1.38	0.54	-0.89	19^{th}
Total intrusions errors trials 1-4	6	1	3	-1.66	5^{th}
Total perseveration errors trials 1-4	9	2.1	4.4	-1.56	6^{th}
Distractor recall trial 5	4	5.6	1.7	-0.94	17^{th}
Intrusion errors trial 5	2	0.19	1	-1.81	3^{rd}
Interference errors trial 5	0	0.18	0.78	0.23	59^{th}
Short delay recall trial 6	6	9.4	2	-1.67	5^{th}
● Intrusion errors trial 6	2	0.19	0.88	-2.05	2^{nd}
Interference errors trial 6	0	0.1	0.7	0.14	55^{th}
Long delay recall trial 7	7	9	2.1	-0.97	17^{th}
Intrusion errors trial 7	0	0.2	0.81	0.25	60^{th}
Interference errors trial 7	1	0.1	0.54	-1.65	5^{th}
Recognition accuracy	10	11.8	1.1	-1.6	5^{th}
Rejection accuracy	12	11.92	0.29	0.27	60^{th}
Memory – Digit Span					
Recall span (forwards)	5	6	1.2	-0.85	20^{th}
Trials correct (forwards)	5	6.8	2.1	-0.83	20^{th}
Recall span (backwards)	3	4.5	1.7	-0.88	19^{th}
Trials correct (backwards)	2	3.7	2.6	-0.65	26^{th}
Memory – Span of Visual Memory					
Recall span	4	5.5	1.2	-1.3	10^{th}
Trials correct	6	7.6	2	-0.78	22^{nd}
Executive Function – Maze					
Trials completed	13	7.2	3.8	-1.53	6^{th}
Completion time	292s	142s	84s	-1.78	4^{th}
Path learning time	266s	116s	88s	-1.72	4^{th}
Overrun errors	34	13	10	-2	2^{nd}
Total errors	70	30	25	-1.57	6^{th}
Verbal – Verbal Interference					
Accuracy (congruent)	21	19.5	2.7	0.54	71^{st}
Errors (congruent)	0	0.2	1.1	0.17	57^{th}
Reaction time (congruent)	914ms	987ms	125ms	0.58	72^{nd}
Accuracy (incongruent)	11	13.8	3.2	-0.88	19^{th}
Errors (incongruent)	2	0.6	1.1	-1.22	11^{th}
Reaction time (incongruent)	1476ms	1313ms	267ms	-0.61	27^{th}

Raw scores of the Cognitive findings (● = statistically significant; Std. Dev = standard deviation; Int. = international).

Details of Scores on the Markers

Measure	Client	Int. Brain Database Average	Int. Brain Database Std. Dev	Z Score	Percentile
Verbal – Spot the Real Word					
Accuracy	33	44	5.6	-1.97	2^{nd}
Verbal – Word Generation					
Number of words generated (FAS)	11.3	13.4	3.4	-0.61	27^{th}
Number of animal names generated	21	24.5	5.4	-0.65	26^{th}
Emotion Identification – Emotion Identification					
Fear % accuracy	75	75	20	-0.01	49^{th}
Fear reaction time	3.36s	2.42s	0.78s	-1.2	12^{th}
Anger % accuracy	50	60	16	-0.62	27^{th}
Anger reaction time	3.42s	2.05s	0.69s	-1.97	2^{nd}
Disgust % accuracy	63	49	16	0.83	80^{th}
● Disgust reaction time	3.58s	2s	0.69s	-2.3	1^{st}
Sadness % accuracy	50	72	21	-1.05	15^{th}
Sadness reaction time	3.58s	2.1s	0.76s	-1.97	2^{nd}
Happiness % accuracy	100	97	15	0.22	59^{th}
Happiness reaction time	994ms	1297ms	200ms	1.52	94^{th}
Neutral % accuracy	100	95.6	4.8	0.93	82^{nd}
Neutral reaction time	1207ms	1446ms	288ms	0.83	80^{th}

Raw scores of the Cognitive findings (● = statistically significant; Std. Dev = standard deviation; Int. = international).

Nominal classification bands	Percentile boundary
Very superior	$\leq 100^{th}$
Superior	$< 98^{th}$
High average	$< 91^{st}$
Average	$< 75^{th}$
Low average	$< 25^{th}$
Borderline	$< 9^{th}$
Extremely Low	$< 2^{nd}$

Self Report Questionnaires

Personal Details	Client
Birth date	withheld
Gender	FEMALE
Height (cm)	15
Weight (kg)	61
Highest level of education	Secondary/High school
Number of years of education	12
Handedness	Right

Physical/Medical History	Client
Vision impairment	Yes
Hearing difficulties	No
Restricted movement	No
Mobile phone	Yes
Dyslexia (learning difficulties)	No
Traumatic experience	Yes
Family or personal psychiatric illness	No
Family or personal neurological disorder	Yes
Serious illness	No
Physical trauma	No

Substance Used	Client
Tobacco	No
Alcohol	No
Marijuana	No

Vision	Client
Color blind	No
Other vision difficulties	Yes, but corrected by glasses/contacts

Mobile Phone	Client
Frequency	Often (more than 30 minutes per day)

Traumatic Experience	Client
Type	Prefer not to specify what type; Death of loved one

Neurological History	Client
Diagnosed with neurological disorder	No
Family history	Yes
Family condition	Neuropathy (or other Nerve disorder)

N/A = data not available

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   (from Brain Resource International Database methodology; gene-brain basis of Negativity Bias)
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See http://services.brainresource.com/webneuroreportreference for Additional References.

Grading

References were classified according to an accepted hierarchy of evidence adapted from the US Agency for Healthcare Policy and Research Classification summarized in the table below.

US AHCPR Guidelines Agency for Health Care Policy & Research	
Level	**Type of evidence**
I	Evidence from large, representative samples.
II	Evidence from small, well-designed but not necessarily representative samples or studies which have been published but do not meet Level I criteria.
III	Evidence from non-representative surveys and case reports.
IV	Evidence from expert committee reports or opinions and/or clinical experience of respected authorities.