Initials: DEMO	Subject: 1234	Test Date Jan. 22, 2014
Age at Test 14.8	Test #: 2	Test Time 10:25
Gender: female	Test Note: 20 Sessions	

Description of Test: Qik CPT is a computerized visual continuous performance test developed for assessing attention and impulse control. The EEG Expert Report on Qik CPT is specifically intended for use by neurofeedback clinicians for assessment and monitoring the effects of EEG training. A simple visual target or non-target is presented once every two seconds. During the 21-minute test, the subject must press a button to respond to each target and not press for each non-target.

Results Summary:

108 Performance Index
(Speed and Consistency of Response)
60 80 100 120 140

107 Speed of Response | **109** Consistency of Response

103 Accuracy Index
(Inattention and Impulsivity)
60 80 100 120 140

103 Sustained Attention (Omission Errors + Outliers) | **104** Impulse Control (Commission + Anticipatory Errors)
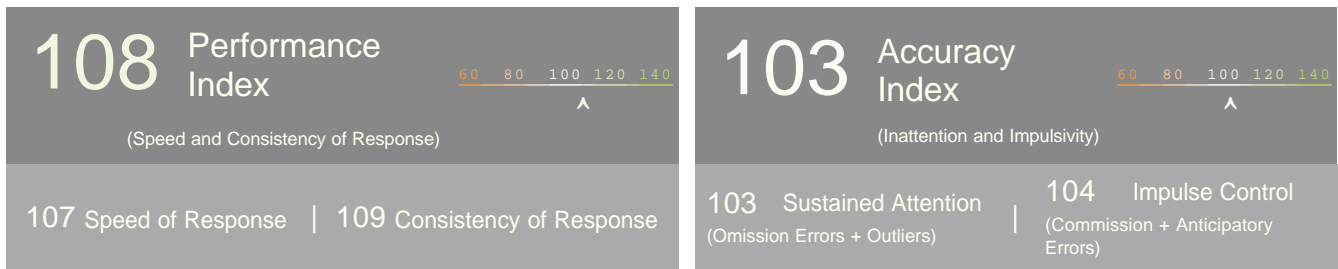
female 14.8

Performance Index reflects speed and consistency of response, which are continuous variables.
Accuracy Index reflects sustained attention and impulse control, which involve discrete errors.
Sustained Attention is determined by omission errors and outliers.
Impulse Control is determined by commission errors and anticipatory errors.
All indices are presented as standard scores. The range of scores is limited from 55 to 145.
Results are with reference to the 2014 population-based QIKnorm for the specific age and gender group.
Scores significantly below average (<80) are printed in red. Scores significantly above average (>120) are printed in green.

Results	Data	Norm	Score	
F14.8 Total Test	Measured Value	Median of Distribution	Standard Score	Percentile
Omission Errors	0 errors	$2_{.8}$ errors	**117**	87 %
Outlier Responses	3 errors	$2_{.3}$ errors	**96**	40 %
Commission Errors	9 errors	$11_{.0}$ errors	**103**	$59_{.5}$ %
Response Time	$367_{.6}$ ms	393 ms	**107**	68 %
Variability	$74_{.4}$ ms	87 ms	**109**	73 %

Omission Errors occur when the subject does not respond correctly to a target
Outliers are correct responses with very long response times.
Commission Errors occur when the subject responds incorrectly to a non-target.
Response Time is the mean of all correct reaction times to a target.
Variability is the standard deviation of correct response times.

RAW DATA	Period 1 Sect. 1 Low Demand	Period 2 Sect. 1 Low Demand	Period 3 Sect. 2 High Demand	Period 4 Sect. 2 High Demand	Period 5 Sect. 3 Low Demand	Sect. 1	Sect. 2	Sect 3	Total
Omissions(#)	0	0	0	0	0	0	0	0	0
Outliers	0	0	3	0	0	0	3	0	3
Commissions(#)	0	0	5	4	0	0	9	0	9
Response time(ms)	402	380	337	366	431	391	352	431	368
Variability(ms)	82	55	84	97	54	71	92	54	74

STANDARD SCORES	Period 1	Period 2	Period 3	Period 4	Period 5	Section s1	Section s2	Section s3	Total
Omission Errors	104	106	109	110	107	108	114	107	117
Outliers	103	104	80	110	107	106	93	107	97
Commission Errors	108	106	96	105	111	110	101	111	104
Response Time	105	117	109	101	106	112	105	106	107
Variability	96	115	107	101	121	106	104	121	109

OTHER RESPONSES	Period 1	Period 2	Period 3	Period 4	Period 5	Section s1	Section s2	Section s3	Total
Anticipatory Resp. (#)	0	0	0	0	0	0	0	0	0
Multiple Responses (#)	0	0	0	0	0	0	0	0	0

Section 1 (periods 1 and 2) and section 3 (period 5) represent the target-infrequent or low-demand task.
Section 2 (periods 3 and 4) represents the target-frequent or high-demand task.

Anticipatory Responses occur within 150 milliseconds of any stimulus (target or non-target).
Multiple Responses reflect more than one response to a stimulus
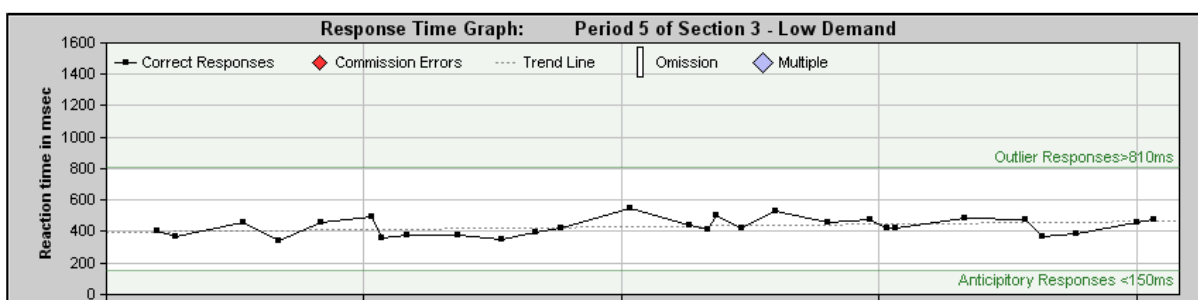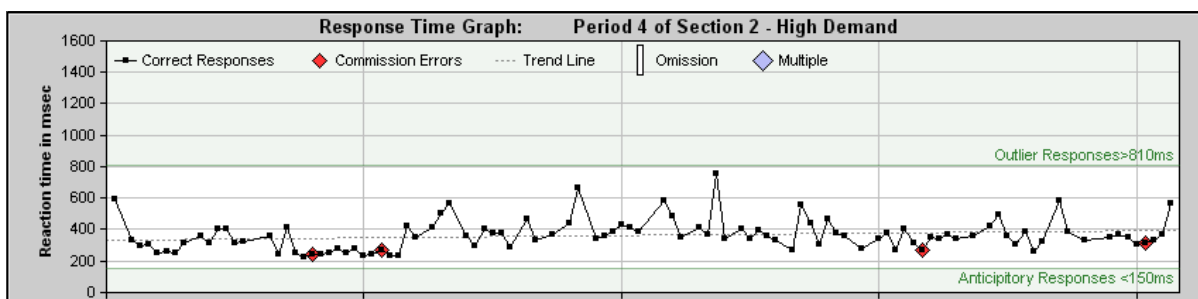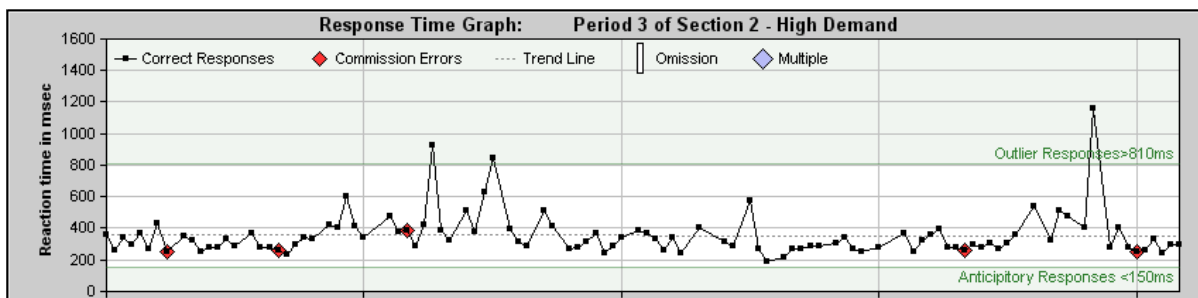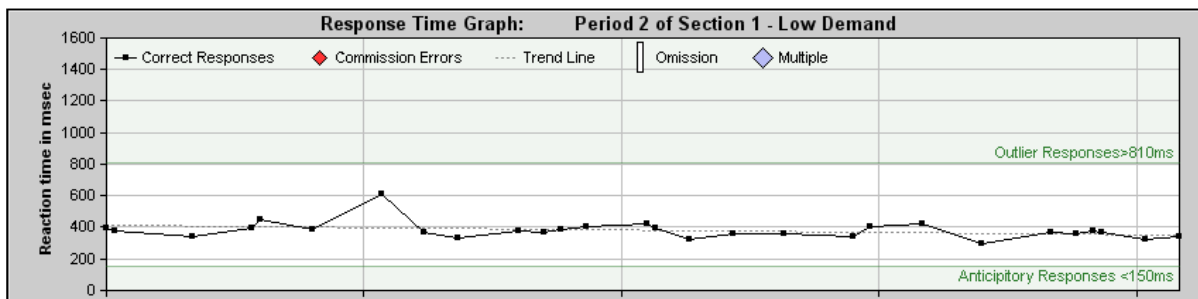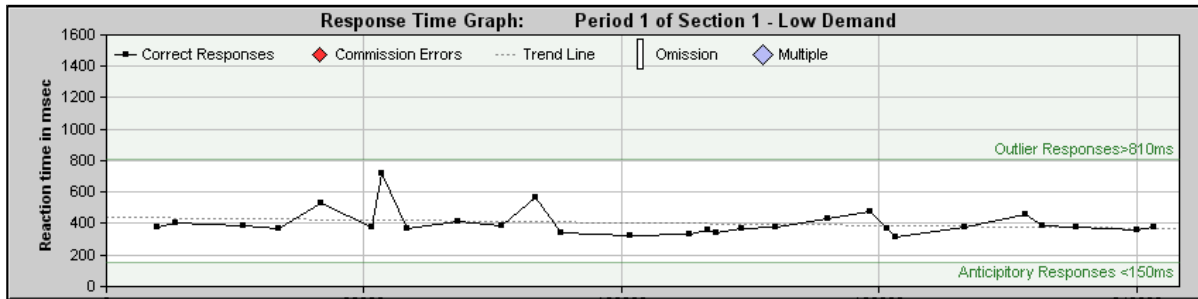Scores significantly below average are printed in red.
Scores significantly above average are printed in green.

Initials: DEMO, #1234   Test Date: Jan. 22, 2014   Test #2
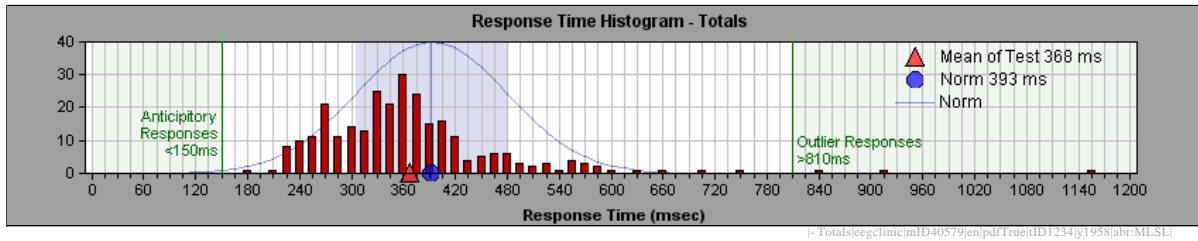
Response Time Graph: Period 1 of Section 1 - Low Demand

Reaction time in msec

— Correct Responses   ◆ Commission Errors   ---- Trend Line   ▯ Omission   ◇ Multiple

Outlier Responses>810ms

Anticipitory Responses <150ms

Response Time Graph: Period 2 of Section 1 - Low Demand

Reaction time in msec

— Correct Responses   ◆ Commission Errors   ---- Trend Line   ▯ Omission   ◇ Multiple

Outlier Responses>810ms

Anticipitory Responses <150ms

Response Time Graph: Period 3 of Section 2 - High Demand

Reaction time in msec

— Correct Responses   ◆ Commission Errors   ---- Trend Line   ▯ Omission   ◇ Multiple

Outlier Responses>810ms

Anticipitory Responses <150ms

Response Time Graph: Period 4 of Section 2 - High Demand

Reaction time in msec

— Correct Responses   ◆ Commission Errors   ---- Trend Line   ▯ Omission   ◇ Multiple

Outlier Responses>810ms

Anticipitory Responses <150ms

Response Time Graph: Period 5 of Section 3 - Low Demand

Reaction time in msec

— Correct Responses   ◆ Commission Errors   ---- Trend Line   ▯ Omission   ◇ Multiple

Outlier Responses>810ms

Anticipitory Responses <150ms

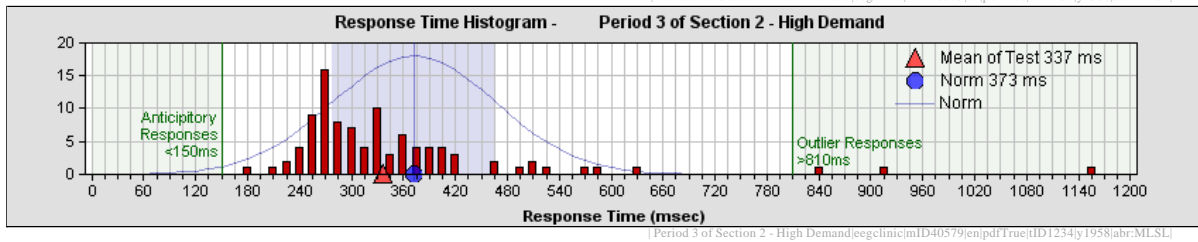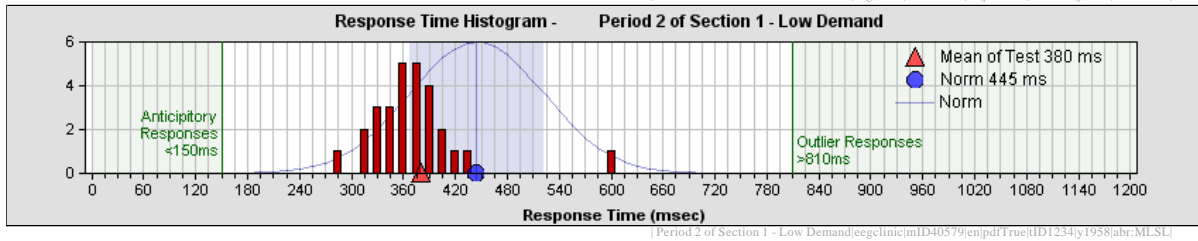X-Axis for all charts: time into QIKtest in msec, with vertical gridlines of 1 minute

Response Time Histogram - Totals

Mean of Test 368 ms
Norm 393 ms
Norm

Norms: the blue line represents a normal distribution of reaction times for this age and group: compare by form and position to your data in red. The light blue area represents 68.2% (or ±1σ) of a normal distribution.

Response Time Histogram -   Period 1 of Section 1 - Low Demand

Mean of Test 402 ms
Norm 422 ms
Norm

Response Time Histogram -   Period 2 of Section 1 - Low Demand

Mean of Test 380 ms
Norm 445 ms
Norm

Response Time Histogram -   Period 3 of Section 2 - High Demand

Mean of Test 337 ms
Norm 373 ms
Norm

Response Time Histogram -   Period 4 of Section 2 - High Demand

Mean of Test 366 ms
Norm 369 ms
Norm

Response Time Histogram -   Period 5 of Section 3 - Low Demand

Mean of Test 431 ms
Norm 460 ms
Norm
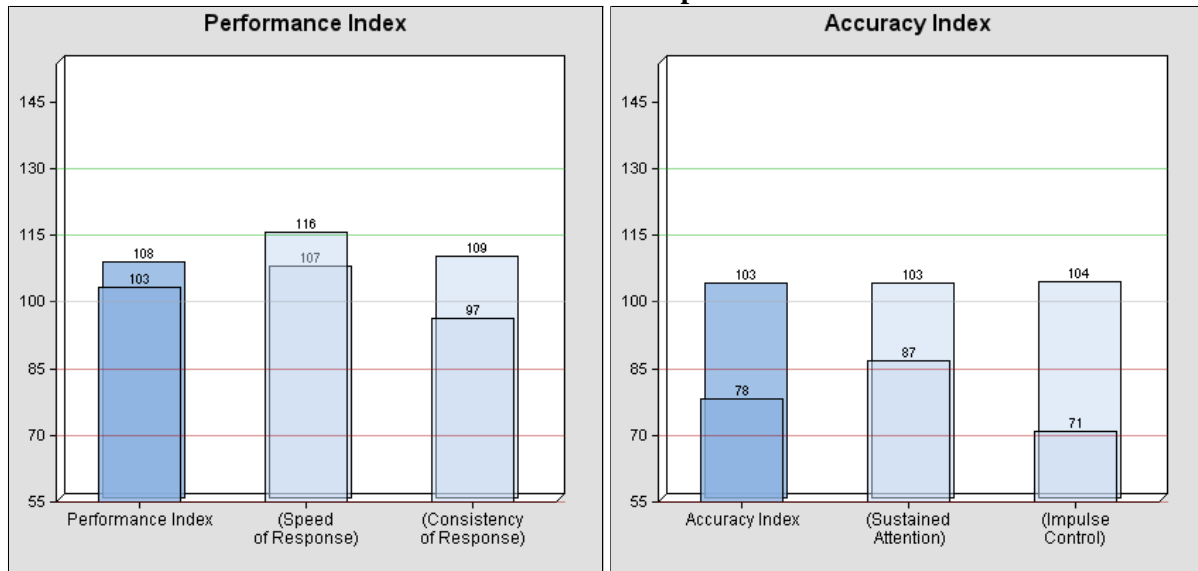
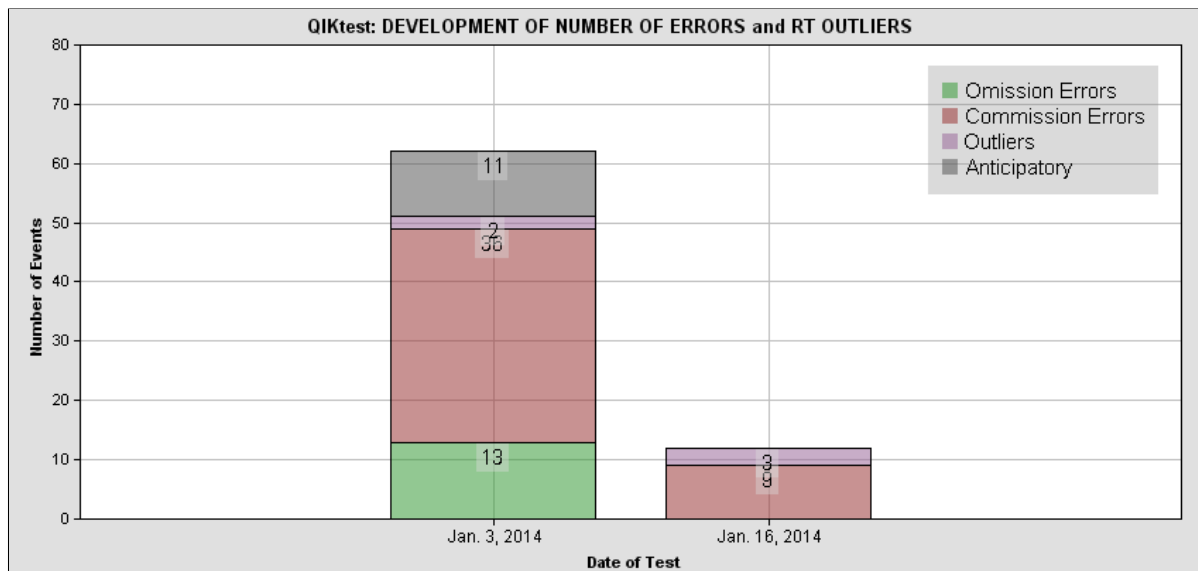Initials: DEMO, #1234   Test Date: Jan. 22, 2014   Test #2

Pre-Post Graphs

Legend for multiple datasets above:
rear row is newest...
 ⌡ QIKtest on Jan22,2014
⌡ QIKtest on Jan13,2014

I N T E R P R E T A T I O N

→ Performance Index is within normal range.
→ Accuracy Index is within normal range.

I. TOTAL SCORES:

→ All total scores are within the normal range.

II. SCORES BY SECTION

→ All scores by section are within the normal range.

→ *Commission Errors and Outliers* **Standard scores are significantly worse in the second section than the first section.**
The second section is the high demand task (target-frequent condition). Lower scores in the second section indicate greater difficulty maintaining attention and control when performing under pressure.

III. SCORES BY PERIOD

→ **Standard scores for *Response Time*** are significantly worse in period 4 than period 3.
Period 4 is a continuation of the same high demand task as period 3. Scoring worse in period 4 indicates increasing difficulty maintaining attention and control under continued pressure.

→ **Standard scores for *Response Time and Variability of Response Time*** are significantly worse in period 1 than period 2.
Section 1 (periods 1 and 2) and section 3 (period 5) represent the target-infrequent or low-demand task.

→ **Standard scores for *Commission Errors and Outliers*** are significantly worse in period 3 than period 4.
Periods 3 and 4 represent the same high demand (stimulus frequent) task. Scoring worse in period 3 indicates relative difficulty changing task compared to maintaining performance of a known task.

→ **Post Commission Response Time is faster than average correct Response Time in period s *3 and 4*.**
A Post Commission Response Time is the response time immediately following a Commission Error. People typically slow down after a Commission Error in order to be more careful. A faster response time following a Commission Error might result from increased speed with increased attention after a careless error. This might indicate that Commission Errors are resulting more from inattention than from lack of impulse control. Look at the Response Time graphs to see which Commission Errors are faster (impulsive) or slower (inattentive) than average.