

Intended Use: The Quotient[®] ADHD Test is intended to give clinicians objective measurements of hyperactivity, impulsivity and inattention as an aid in the assessment of ADHD. Use this test as part of a comprehensive diagnostic evaluation.

Motion Analysis

Motion Results

Measure	Ref. Range	Result	Age %ile
Immobility Duration	103-331 ms	68 ms	3 ^t
# Movements	916-2859	4445	3 ^t
Total Displacement	1.21-4.13 m	8.7 m	3 ^t
Area	24-104 cm ²	384 cm ²	1 ^t
Spatial Complexity	1.099-1.320	1.042	1 ^t
Temporal Scaling	0.345-0.771	0.825	12 ^t

The table shows six motion results. The most important information is the percentile score. It indicates how the patient ranks with age and gender matched groups. It's like the "curve" on a standardized exam.

Head Motion



The figure shows the path of the reflector that was on the patient's head. This graphic shows excessive motion throughout the test.

Attention Analysis

Response Results

Measure	Ref. Range	Result	Age %ile
Accuracy	82.9-96.7%	83.3%	16 ^t
Omission errors	0.3-6.4%	10.2%	10 ^t
Commission errors	5.8-28.2%	23.4%	24
Latency	403.5-535 ms	508 ms	75
Variability	87-153 ms	137 ms	26
COV (Normalized response time)	19.1-32.5	26	35

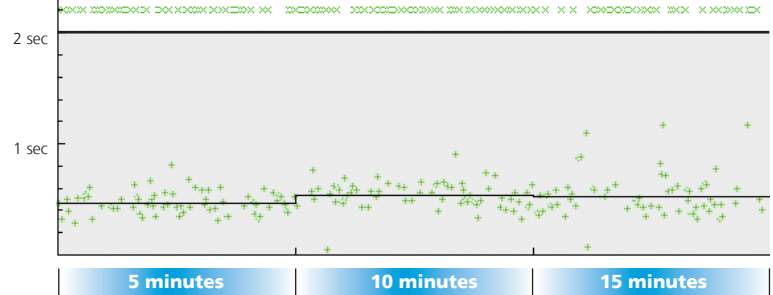
The table and graphs in this section record the results of hitting the target (8-pointed) star and letting the non-target (5-pointed) star pass. Accuracy of responses was at the 16th percentile. Omission errors are incorrect passes (10th percentile). Commission errors are incorrect hits (24th percentile). The graphs show loose scatter, which indicates that the patient did not get into a rhythm. Performance degraded over time. The Attention State Summary below categorizes the responses in this task.

- Key:** + designates a target. X designates a non-target.
- + Omission errors: incorrect passes (Measures inattention.)
 - X Commission errors: incorrect hits (Measures impulsivity.)
 - X Correct passes
 - + Correct hits

Incorrect responses



Correct responses



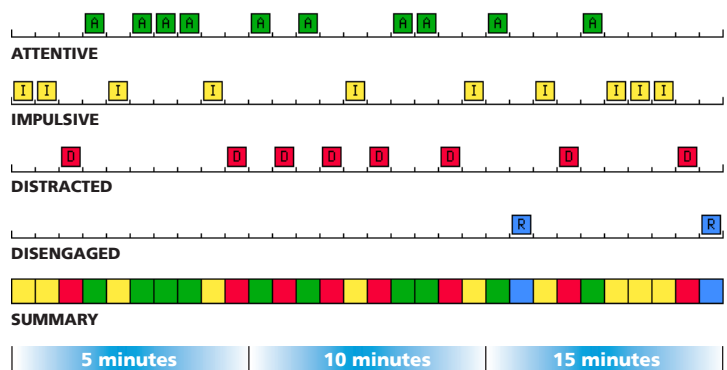
Attention State Summary

Attention State Results

Measure	Ref. Range	Result	Age %ile
# Shifts	4-18	23	5 ^t
Attentive	33.3-93.3%	33.3%	16 ^t
Impulsive	5.0-46.7%	33.3%	34
Distracted	0-13.3%	26.7%	5 ^t
DISENGAGED			
Random	0-3.3%	3.3%	25
Minimal	0-0%	3.3%	10 ^t
Contrary	0-0%	0.0%	99

The Quotient[®] ADHD System analyzes 30 x 30-second blocks of data and summarizes the information on the attention state chart. For the first 60 seconds, this child showed impulsive behavior, followed by 30 seconds of distraction, followed by 30 seconds on task, and so on. The table shows that he had 23 attention shifts overall (5th percentile) and that he was attentive for 33.3% of the test (16th percentile).

Attention State Analysis for 30 Second Segments



	12/11/2009	02/08/2010
System Index	Likely	Unlikely
Scaled Scores		
Motion	8.82	3.53
Attention	7.44	2.44
Global	8.13	
		2.99

System Index Key

Unlikely	Possible	Probable	Likely
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The **System Index** compares the child's 6 motion scores and 13 attention and impulsivity scores to result profiles in the BioBDx database of individuals of same age and gender with ADHD and without ADHD. This is an estimate of the probability that the child will meet diagnostic criteria for ADHD on full clinical assessment.

The System Index indicates ADHD was Likely at baseline (graphical results shown on the reverse side). The System Index improved to Unlikely after medication. The System Index is based on the weighting of the 19 parameters measured. Your doctor evaluates the System Index in conjunction with the Scaled Scores, the individual parameters and other assessment tools and clinical evaluation.

The **Scaled Scores** are normalized calculations on a 10-point scale. The average Motion or Attention Scaled Score for a person **without** ADHD is approximately 4. The average scaled score for a person **with** ADHD is around 7. Higher Scaled Scores indicate deficit in control of motion and attention compared to age and gender matched subjects. The Global Scaled Score is an average of the motion and attention scores.

For this patient, the Motion Scaled Score and Attention Scaled Score both improved with medication. The Motion Scaled Score started at 8.82 and improved to 3.53. The Attention Scaled Score was 7.44 at baseline and improved to 2.44.

Summary of Results

	12/11/2009		02/08/2010		
	Result	%ile	Result	%ile	
Motion					
Immobility Duration	68 ms	3 [†]	357 ms	86	Average time not moving greater than 1 mm.
# Movements	4445	3 [†]	892	84	Average number of position changes >1 mm.
Total Displacement	8.7 m	3 [†]	1.41m	76	Total distance traveled by the reflector.
Area	384 cm ²	1 [†]	72 cm ²	31	Two-dimensional space in which the reflector moved.
Spatial Complexity	1.042	1 [†]	1.160	41	Describes the complexity of the movement path, with values from 1 to 2. Patients with ADHD tend to have low spatial complexity values, indicating simple/back-and-forth movements.
Temporal Scaling	0.825	12 [†]	0.117	98	Frequency of movement, with values from 0 to 1. Infrequent movements with long periods of inactivity yield values close to 0. Incessant movement produces values close to 1.
Attention Analysis					
Accuracy	83.3%	16 [†]	93.1%	56	Percentage of correct responses to both the targets and the non-targets.
Omission errors	10.2%	10 [†]	0.0%	99	Percentage of time that the patient failed to respond to the target. Omission errors measure the patient's level of distraction and/or degree of inattention.
Commission errors	23.4%	24	13.8%	49	Percentage of incorrect responses made to the non-targets. Commission errors are a measure of the patient's impulsivity or inability to inhibit a response.
Latency	508 ms	75	400 ms	17	Mean reaction time (milliseconds) to respond to a target.
Variability	137 ms	26	83 ms	88	Variation (standard deviation) in response times to the correct target. High levels of variability indicate that the patient is inconsistent in the task performance.
COV	26	35	20	74	Variability that is adjusted to take into account difference in response latency. (COV = (100 x Variability) / Latency). This is a more stringent measure of response consistency.
Attention Shifts					
# Shifts	23	5 [†]	14	41	Count of the number of attention state shifts during the test.
Attentive	33.3%	16 [†]	66.7%	43	The patient is attentive/on task, i.e., hits many targets and few non-targets.
Impulsive	33.3%	34	33.3%	34	The patient hits many targets and some non-targets.
Distracted	26.7%	5 [†]	0.0%	99	Misses some targets and hits some non-targets, with accuracy better than chance.
DISENGAGED					
Random	3.3%	25	0.0%	99	Hits most targets and non-targets with accuracy about as good as chance.
Minimal	3.3%	10 [†]	0.0%	99	Patient misses most targets and non-targets, with accuracy about as good as chance.
Contrary	0.0%	99	0.0%	99	Accuracy is significantly worse than chance.