

Every person with ADHD
has a unique portrait.

Now you can see it
objectively.



Objective Test

The Quotient® ADHD System accurately measures motion and attention state to give an objective, clear picture of the core symptom areas of ADHD.

- Hyperactivity
- Impulsivity
- Inattention

Adult ADHD is Real

It is a common misconception kids outgrow ADHD, but 60% of children diagnosed with ADHD have symptoms into adulthood. Symptoms are more subtle in adults, but can create significant challenges in every day life. The Quotient® ADHD Test is an objective aid in the assessment of ADHD.

Clear Report to Guide Decisions

The Quotient® ADHD Test takes 20 minutes for adolescents and adults. The report is available to the clinician in less than a minute to help guide the conversation regarding treatment.

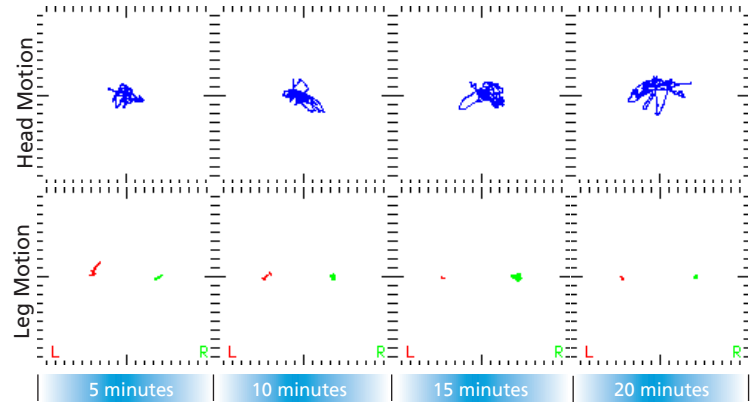
Quotient
ADHD system

Adult ADHD
Case Study
Alex
Age 21

Baseline Assessment
Alex, age 21. No medication.

Motion Analysis

Measure	Ref. Range	Result	Age %ile
Immobility Duration	H 159-601 ms L/R 836-14842 ms	210 ms 4328/892 ms	27 57/15 ¹
# Movements	H 449-1935 L/R 32-309/30-297	1464 564/3410	31 5/1 ¹
Total Displacement	H 0.527-2.82 L/R 0.035-0.438	2.21 m 0.86/7.48 m	27 6/1 ¹
Area	H 11-107 cm ² L/R 1-13/2-13 cm ²	102 cm ² 5/6 cm ²	17 46/38
Spatial Complexity	H 1.1-1.431 L/R N/A / N/A	1.098 1.437/1.336	15 ¹ N/A
Temporal Scaling	H 0.116-0.63 L/R 0 / 0	0.390 0.433/1.000	41 N/A



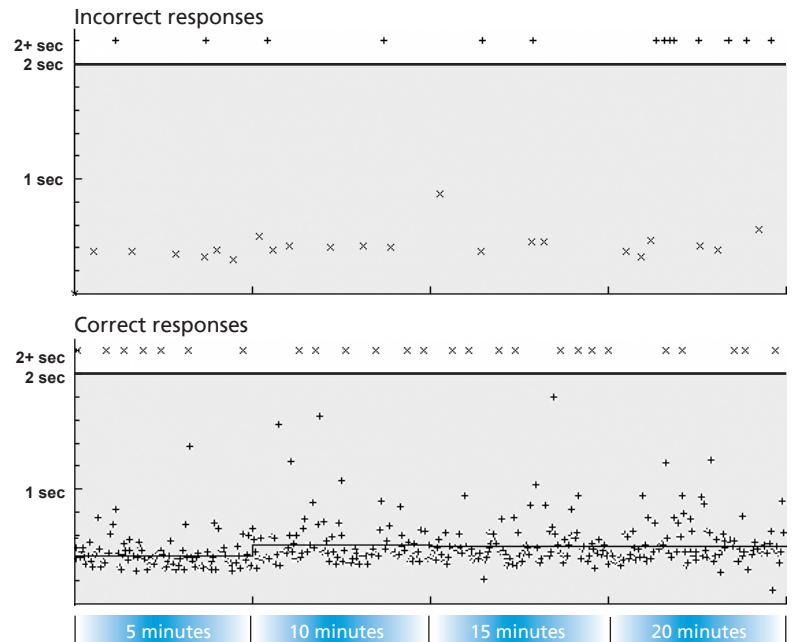
The data indicate that Alex has motion control dysfunction.

Attention Analysis

Measure	Ref. Range	Result	Age %ile
Accuracy	68.0-95.0%	75.5%	27
Omission errors	0.0-1.1%	3.4%	2 ¹
Commission errors	10.9-60.0%	45.6%	29
Latency	N/A	484 ms	N/A
Variability	69-124 ms	181 ms	3 ¹
COV (Normalized response time)	16-26	37	1 ¹

Accuracy of responses was 75.5% (27th percentile), which may be clinically significant. He had 3.4% omission errors (2nd percentile), which is significant. He had 45.6% commission errors (29th percentile), which may be clinically significant. The graphs show loose scatter, which is reflected in the variability and normalized response times in the table. Results fall well below the 16th percentile.

- 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



Attention State Summary

Measure	Result
# Shifts	28
Attentive	15.0%
Impulsive	40.0%
Distracted	42.5%
DISENGAGED	2.5%

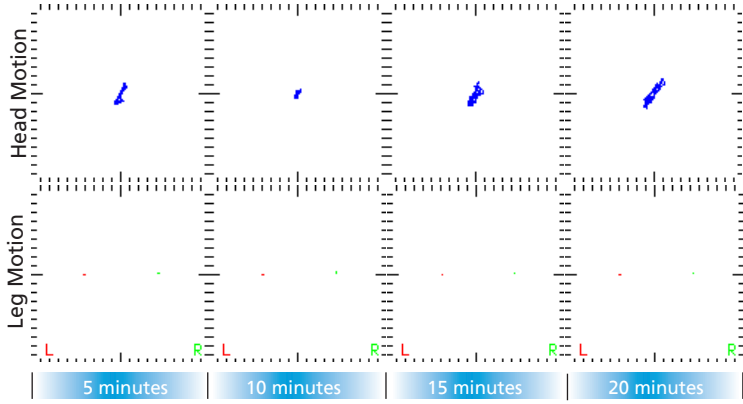
The Quotient® ADHD System analyzes 40 x 30-second blocks of data and summarizes the information on the attention state chart. For the first 30 seconds, Alex was attentive, followed by 60 seconds of distraction, followed by 30 seconds of impulsive behavior, and so on. The table shows that he had 28 attention shifts overall, that he was on task for 6 of 40 (15% of the test), impulsive 40%, distracted 42.5% and disengaged for 2.5% of the time.

Attention State Analysis for 30 Second Segments



Post-Medication Assessment

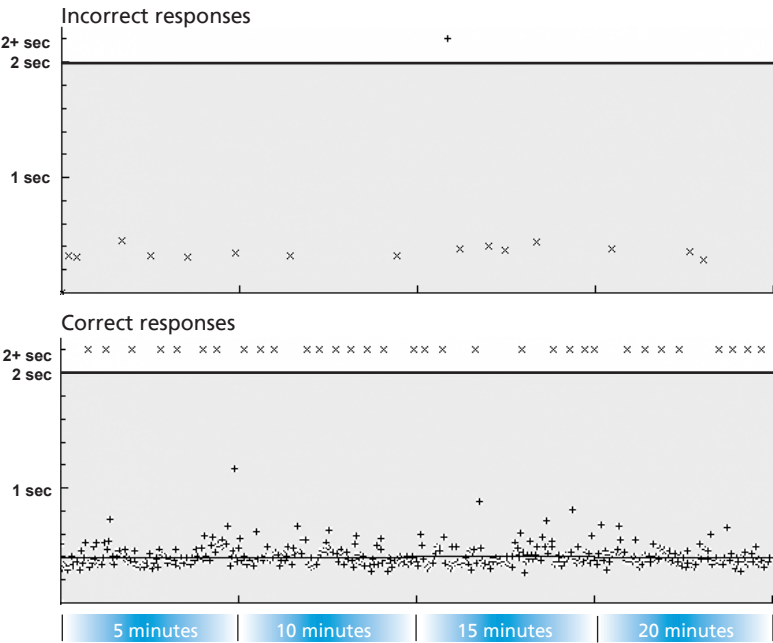
7 mg Focalin. The Quotient® ADHD Test was administered 2 hours following the last dose.



Alex is within the range of non-ADHD adults. His hyperactivity is well controlled.

Measure		Ref. Range	Result	Age %ile
Immobility	H	159-601 ms	528 ms	79
Duration	L/R	836-14842 ms	79458/89971	98/99
# Movements	H	449-1935	639	73
	L/R	32-309/30-297	5/4	96/97
Total Displacement	H	0.527-2.82	0.79 m	73
	L/R	0.035-0.438	0.01/0.00 m	96/97
Area	H	11-107 cm ²	25 cm ²	66
	L/R	1-13/2-13 cm ²	1/1 cm ²	91/95
Spatial Complexity	H	1.1-1.431	1.345	69
	L/R	N/A / N/A	1.859/1.763	N/A
Temporal Scaling	H	0.116-0.63	0.065	85
	L/R	0 / 0	0.0/0.0	N/A

Motion Results



Measure		Ref. Range	Result	Age %ile
Accuracy		68.0-95.0%	84.4%	48
Omission errors		0.0-1.1%	0.2%	62
Commission errors		10.9-60.0%	31.1%	48
Latency		N/A	398 ms	N/A
Variability		69-124 ms	89 ms	50
COV (Normalized response time)		16-26	22	34

Observations

Medication improved focus and nearly eliminated omission errors. There are still many commission errors, with performance at 48th percentile. Accuracy of responses improved to 84.4%, which is within the reference range. The normalized response score is at the low end of the reference range.

Response Results

Attention State Analysis for 30 Second Segments



Measure	Result
# Shifts	25
Attentive	62.0%
Impulsive	30.0%
Distracted	7.5%
DISENGAGED	0.0%

Alex shifted attention states frequently between attentive and impulsive behavior. He also displayed distracted behavior in the second half of the test. The high number of attention state shifts suggests that Alex's attention performance may not be optimal.

Attention State Results

Quotient® ADHD Scaled Scores

	Baseline	Follow-up
Motion	8.28	4.17
Attention	8.69	6.07
Global	8.47	
		5.12

KEY

Scaled Scores	0.00-2.50	2.51-5.00	5.01-7.50	7.51-10.00
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The **Scaled Scores** are normalized calculations on a 10-point scale. Higher Scaled Scores indicate deficit in control of motion or attention compared to age and gender matched subjects. The Global Scaled Score is an average of the motion and attention scores.

Alex's Motion Scaled Score at baseline was 8.28 and reflects the fact that most of his motion percentile scores were lower than the 35th percentile. His performance improved to 4.17 in his follow-up assessment.

The baseline Attention Scaled Score reflect that 3 parameters were less than or equal to the 16th percentile, which is significant, and 2 additional parameters between the 17th and 35th percentile, which may be clinically significant. He had 28 attention shifts, with attentive behavior only 15% of the test.

Although his on-task performance improved in the follow-up test, he still displayed a large number of attention state shifts. One may argue that high percentage of impulsive states in Alex's test might render a higher Attention Scaled Score. However the composite scores are not designed to "punish" for impulsivity. Impulsivity is very strongly influenced by factors other than ADHD, and contributes less to the integrated Quotient assessment for ADHD than other measures. Therefore, the attention severity measure is weighted more heavily on distraction and disengagement factors, and less on impulsivity.

Objective Data to Make More Informed Decisions

The Quotient® ADHD System measures motion and analyzes shifts in attention state to give an objective picture of the core symptom areas of ADHD. Integrate the Quotient® ADHD Test report with information from other assessment tools and your clinical evaluation to guide treatment decisions.

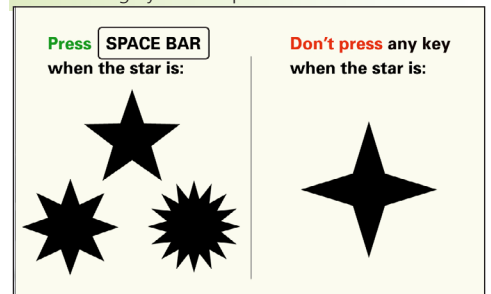
- Use the Quotient® ADHD Test at the initial visit to assess severity of hyperactivity, inattention and impulsivity, especially with complex patients.
- Use the objective report to streamline the discussion with the patient. Maximize work flow and efficiency.
- Re-assess the patient periodically at follow-up visits to guide treatment plans.

Simple Test Administration

1. Enter demographics and medications.

First Name:	<input type="text" value="Alex"/>
Last Name:	<input type="text" value="Jones"/>
Gender:	<input type="text" value="Male"/>
Date of Birth:	<input type="text" value="May"/> <input type="text" value="5"/> <input type="text" value="1989"/>
Grade:	<input type="text" value="college"/>
Race:	<input type="text"/>
Weight:	<input type="text"/>
Height:	<input type="text"/>

2. Place reflectors and adjust the Motion Tracking System. Explain the test.



3. Patient performs the 20-minute test.



4. Upload the data.

The report is available in less than 1 minute. Objective information helps to guide the discussion regarding treatment options.



Motion Tracking System