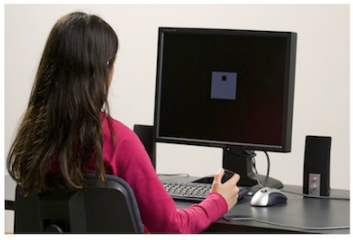
The Test Of Variables of Attention (T.O.V.A.®)

The **Test of Variables of Attention (T.O.V.A.)** is an FDA-cleared, state-of-the-art continuous performance test that provides healthcare professionals with objective measurements of attention and inhibitory control. The T.O.V.A. aids in the assessment of, and evaluation of treatment for, attention deficits, including attention-deficit/hyperactivity disorder (ADHD). T.O.V.A. results are available for children and adults (ages 4 - 80+) and should only be interpreted by qualified professionals.

The T.O.V.A. continuously measures performance during a 10.8-minute task or a 21.6-minute task, depending on age. It records speed, accuracy, and consistency of responses to a series of squares (in the visual T.O.V.A. test) or tones (in the auditory T.O.V.A. test) that are presented in two-second intervals. These measurements (accurate to ±1 ms) are then compared by age and gender to a normative sample (a sample of people without attention problems). This comparison determines whether the test results are "within normal limits" or not. The T.O.V.A. also compares results to a group of people independently diagnosed with ADHD. The T.O.V.A. report is based on these two comparisons, as well as performance, session, and response validity measures.



If you have questions about this report, please contact the person who provided it to you. For more information about attention and the T.O.V.A., please visit our website at https://www.tovatest.com/. To contact us please email info@tovatest.com or call 800.PAY.ATTN (562.594.7700).

ID: **1** **Example Subject** (Jan 1, 1975)
Male - 42y 6m 0d

Visual T.O.V.A. (v9.0-78 sn30000)
Jul 1, 2017 at 8:10 AM

Session, Response, and Performance Validity

This session meets session, response and performance validity criteria.

T.O.V.A. Interpretation

The results of this T.O.V.A. are not within normal limits, and may be suggestive of a possible attention deficit, including ADHD, because the Comparison to the Normative Sample is not within normal limits. Please see the Interpretation Notes page for additional information.

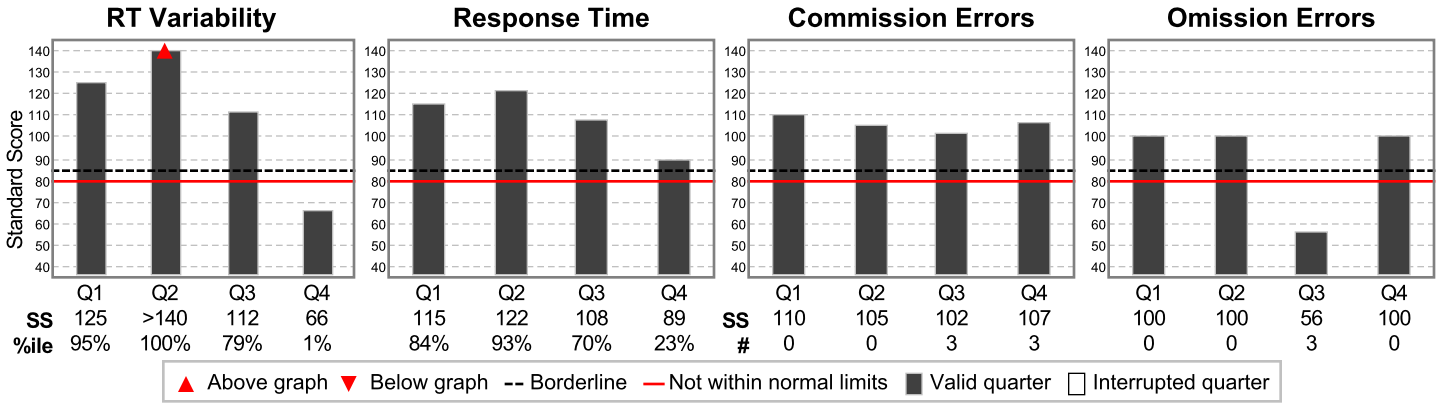
Treatment

No treatments entered.

Comparison to the Normative Sample

These scores compare this subject's performance to the performance of individuals of the same gender and age in the T.O.V.A. Normative Sample, a study of individuals who did not have attention problems.

Results are reported as standard scores (average standard = 100; standard deviation = 15). Standard scores above 85 are considered to be in the normal range, scores between 80 and 85 are considered borderline, and scores below 80 are considered not within normal limits. Scores less than 70 are considered significantly below normal range. Standard scores less than 40 are more than 4 standard deviations from normal, and are denoted as "<40".



Quarters, Halves and the Total are independently calculated and are not averages. Any Quarter, Half or Total that is Borderline or Not Within Normal Limits causes the Interpretation to be Borderline or Not Within Normal Limits. See the Interpretation Notes page for more information on these variables and on the subject's performance.

	Quarter				Half		Total
	1	2	3	4	1	2	
RT Variability	125	>140	112	66	>140	79	91
Response Time	115	122	108	89	119	99	104
Commission Errors	110	105	102	107	115	105	108
Omission Errors	100	100	56	100	100	56	56
	Infrequent		Frequent				

Key: Borderline, Not within normal limits, Invalid

ID: **1** **Example Subject** (Jan 1, 1975)
Male - 42y 6m 0d

Visual T.O.V.A. (v9.0-78 sn30000)
Jul 1, 2017 at 8:10 AM

Session comments

Visual baseline. Motorcycle accident. Head injury.

Session, Response, and Performance Validity

Performance Validity

No Performance Validity rules have been flagged.

Performance Validity is flagged to alert clinicians when there is unusually poor performance on the T.O.V.A. Only a clinician can determine if the test performance is consistent with (1) ADHD, (2) attention deficits due to traumatic brain injury, substance use disorders, sleep disorders, or other causes, or (3) poor effort, or (4) malingering. Higher numbers of flags indicate increasingly unusual patterns of performance and warrant more caution interpreting test performance. Special caution should be taken when the possibility of secondary gain exists. Performance Validity is only applicable to ages 17 or older.

Rule	Results	Flagged
Total omission errors greater than 30	3	0
Half 1 commission errors (CE) greater than 10	0	0
Half 2 response time (RT) skew greater than +150 ms	+34 ms	0
Half 2 CE RT minus RT greater than +75 ms	N/A: < 7 CEs	0
Total rules flagged:		0

Notes on the Comparison to the Normative Sample

Variability is a precise measure of variations in correct response times, and measures the consistency of response times. **Variability was not within normal limits in Quarter 4 and Half 2.**

Response Time is the average speed of correct responses to targets, and is a measure of information processing speed. **Response Time was within normal limits.**

Commission Errors occur when the subject incorrectly responds to a nontarget, and are a measure of inhibitory control. **Commission Errors were within normal limits.**

Omission Errors occur when the subject does not respond to a target, and are a measure of sustained attention. **Omission Errors were not within normal limits in Quarter 3, Half 2, and Total.**

Response Patterns

Only Half 2 (frequent stimuli) is not within normal limits and may represent poor task performance under conditions of high arousal and/or a decline in performance after 10 minutes of a task.

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Visual T.O.V.A. (v9.0-78 sn30000)
Jul 1, 2017 at 8:10 AM

Treatment

No treatments entered.

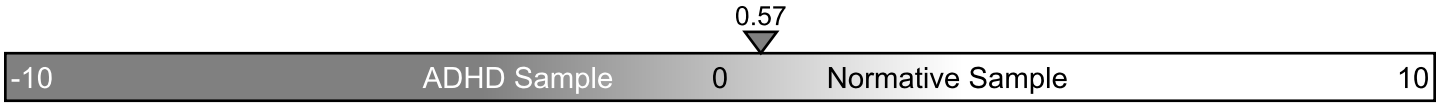
Attention Comparison Score

The Attention Comparison Score (ACS) is a subset of T.O.V.A. variables used to compare the subject's performance to a sample of individuals independently diagnosed with ADHD. Scores below 0 suggest a performance more similar to that of individuals with ADHD.

Note that the ACS does not include important variables from the Comparison to the Normative Sample. In order to understand the overall test results, the ACS should always be used with the Comparison to the Normative Sample, found on the Summary page. In particular, when the ACS is above zero and the Comparison to the Normative Sample is not within normal limits, the results should be considered not within normal limits.

The ACS is calculated by summing the following Z scores:

Response Time (Half 1)	1.29
D Prime (Half 2)	-1.92
Variability (Total)	-0.60
Calibration constant	1.80
Attention Comparison Score	0.57



ID: **1** **Example Subject** (Jan 1, 1975)
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Visual T.O.V.A. (v9.0-78 sn30000)
Jul 1, 2017 at 8:10 AM

This page contains tabulated raw data and documents T.O.V.A. session parameters.

		Quarter				Half		Total
		1	2	3	4	1	2	
RT Variability	ms	32	23	52	99	29	81	73
Response Time	ms	322	307	310	342	314	326	323
Post-commission responses	#	0	0	2	3	0	5	5
Response Time	ms	0	0	345	309	0	323	323
Variability	ms	0	0	23	45	0	41	41
Commission Errors	#	0/126	0/126	3/36	3/36	0/252	6/72	6/324
Percentage	%	0	0	8.3	8.3	0	8.3	1.9
Response Time	ms	0	0	224	274	0	249	249
Omission Errors	#	0/36	0/36	3/126	0/126	0/72	3/252	3/324
Percentage	%	0	0	2.4	0	0	1.2	0.9
D Prime		8.53	8.53	3.36	5.65	8.53	3.64	4.44
Standard Score		114	111	73	100	122	71	67
Beta		1	1	0.37	0	1	0.2	0.55
Anticipatory	%	0	0	0	0	0	0	0
To Nontargets	#	0	0	0	0	0	0	0
To Targets	#	0	0	0	0	0	0	0
Multiple Responses	#	0	0	0	0	0	0	0
Total Correct	#	162/162	162/162	156/162	159/162	324/324	315/324	639/648
Percentage	%	100	100	96.3	98.1	100	97.2	98.6
Skew	ms	0	-5	25	36	-8	34	29
User Interrupts	#	0	0	0	0	0	0	0
Hardware errors	#	0	0	0	0	0	0	0
		Infrequent		Frequent				

Session parameters

Format:	1 (standard)
ISI:	2000 ms
Stimulus On Time:	200 ms
Stimulus Off Time:	300 ms
Anticipatory Cutoff	150 ms

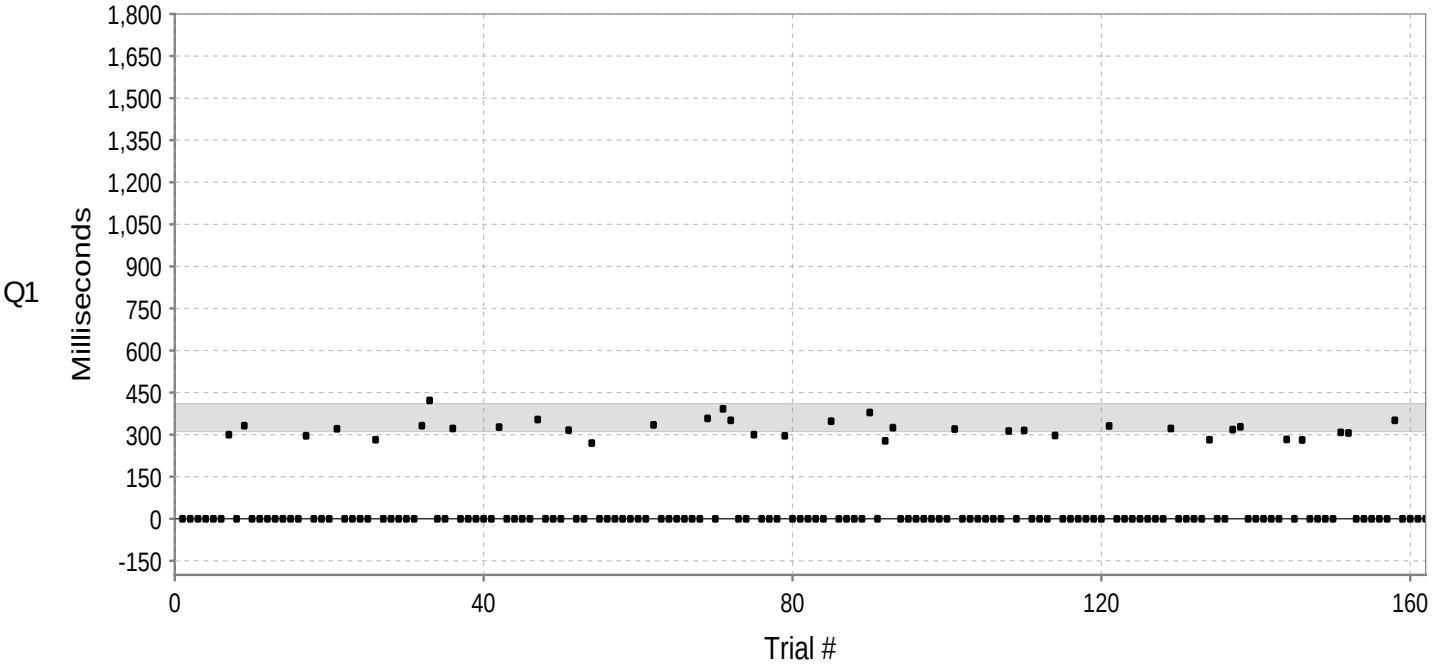
Session information

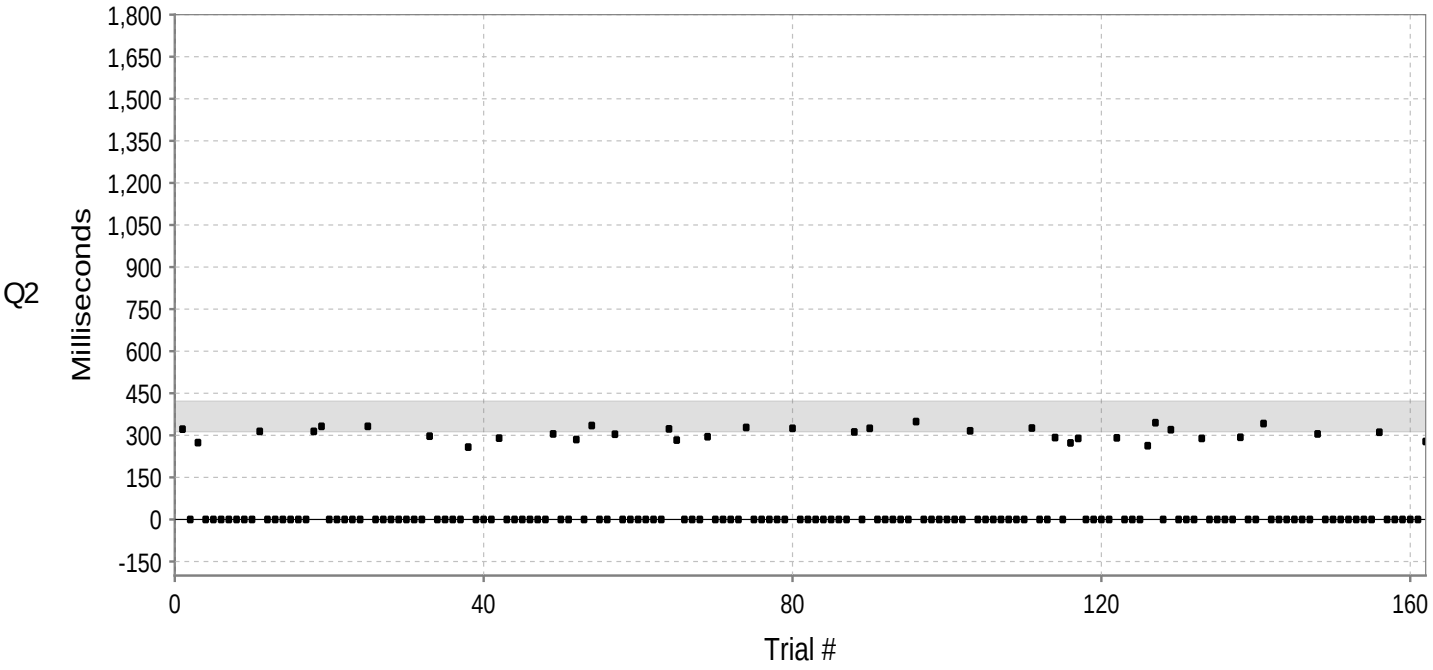
Tester:	
Import Filename:	example-treament-42m.tova (2 / 2)
Import Date:	Aug 23, 2022 11:51:30 AM
Errors/Warnings:	Microswitch message flooding (2)

ID: **1** **Example Subject** (Jan 1, 1975)
Male - 42y 6m 0d

Visual T.O.V.A. (v9.0-78 sn30000)
Jul 1, 2017 at 8:10 AM

This page graphically displays the subject's responses. Black squares mark correct responses and correct nonresponses. Red 'X's mark commission errors, red squares mark anticipatory responses, and underlined red circles mark omission errors. The light gray region represents the normative range of responses. Commission errors followed by a correct response are linked by a line: an upward slope (light gray) indicates slowing down following an error (typical), and a downward slope (black) indicates speeding up after making an error (unusual). Red numbers above the zero line indicate the number of missed targets (if three or more in a row), and the red number below the zero line indicates the number of seconds elapsed between correct target responses.





Correct response · Correct non-response · Commission error · Omission error · Anticipatory response
Post-commission error correct response · Slower post-commission RT · Faster post-commission RT
Off-scale resp./error · Normative range · Interruption · 3 10s Response gap (# Targets and Sec)

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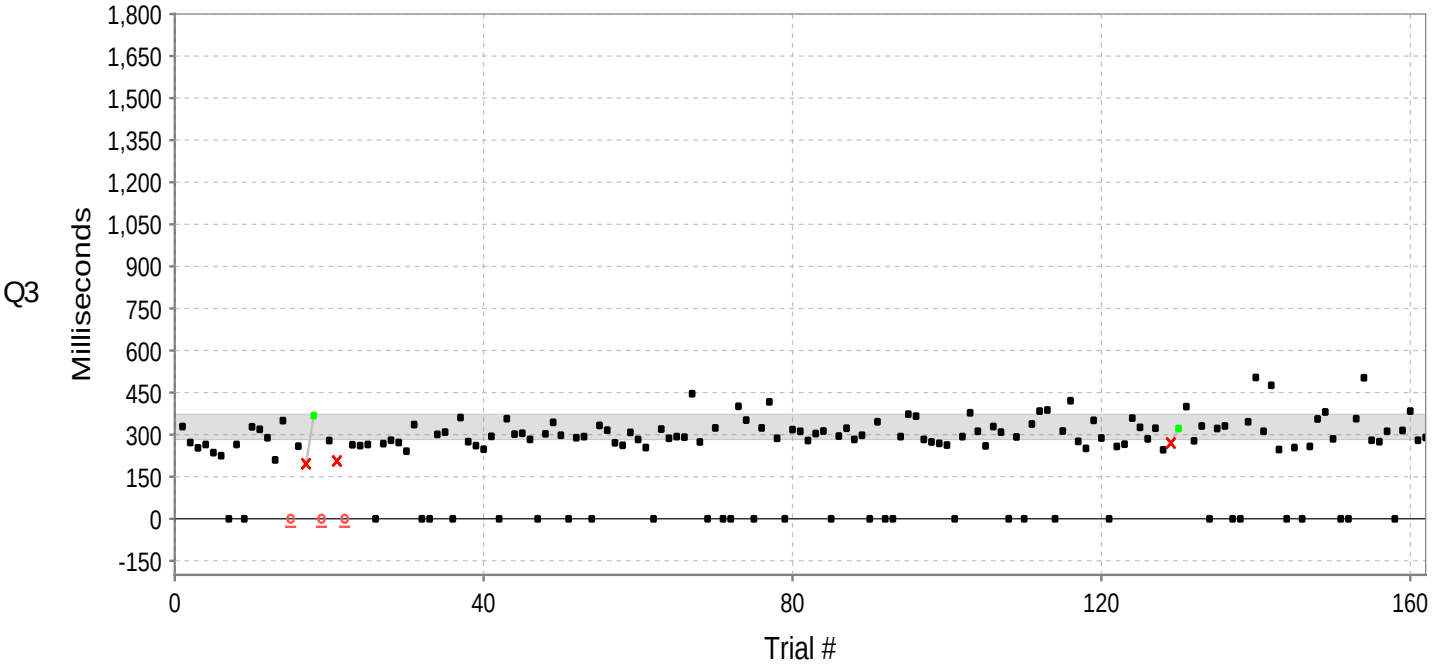

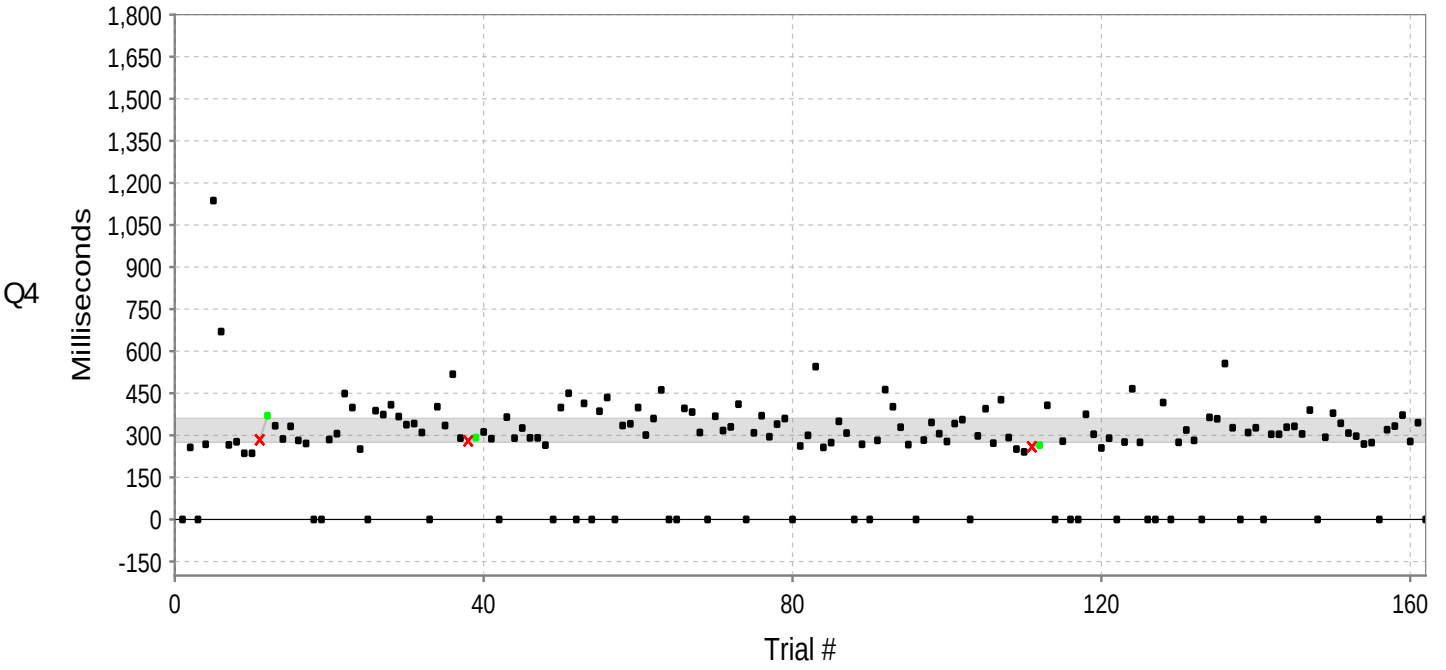

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This page shows a trial-by-trial view of T.O.V.A. test data. Each entry in the table indicates the stimulus type (target or nontarget) and the subject's response to that stimulus. Error responses are shown in red, and response times are in milliseconds. A negative response time indicates a response that was made before the stimulus was presented.

1-27	28-54	55-81	82-108	109-135	136-162
N	N	N	N	N	N
N	N	N	N	T 315	T 318
N	N	N	N	N	T 328
N	N	N	T 348	N	N
N	T 332	N	N	N	N
N	T 422	N	N	T 297	N
T 300	N	N	N	N	N
N	N	T 335	N	N	N
T 332	T 322	N	T 379	N	T 283
N	N	N	N	N	N
N	N	N	T 278	N	T 281
N	N	N	T 325	N	N
N	N	N	N	T 331	N
N	N	N	N	N	N
N	T 327	T 358	N	N	N
N	N	N	N	N	T 308
T 296	N	T 392	N	N	T 306
N	N	T 351	N	N	N
N	N	N	N	N	N
N	T 354	N	T 320	N	N
T 321	N	T 300	N	T 322	N
N	N	N	N	N	N
N	N	N	N	N	T 351
N	T 316	N	N	N	N
N	N	T 296	N	N	N
T 282	N	N	N	T 282	N
N	T 270	N	T 313	N	N

163-189	190-216	217-243	244-270	271-297	298-324
T 322	N	N	N	N	N
N	N	N	N	N	N
T 274	N	T 304	N	T 326	T 293
N	N	N	N	N	N
N	N	N	N	N	N
N	T 297	N	N	T 292	T 342
N	N	N	T 312	N	N
N	N	N	N	T 273	N
N	N	N	T 325	T 289	N
N	N	T 323	N	N	N
T 314	T 258	T 283	N	N	N
N	N	N	N	N	N
N	N	N	N	N	T 305
N	N	N	N	T 291	N
N	T 290	T 295	T 349	N	N
N	N	N	N	N	N
N	N	N	N	N	N
T 314	N	N	N	T 263	N
T 332	N	N	N	T 345	N
N	N	T 328	N	N	N
N	N	N	N	T 320	T 311
N	T 305	N	T 316	N	N
N	N	N	N	N	N
N	N	N	N	N	N
T 332	T 285	N	N	T 289	N
N	N	T 325	N	N	N
N	T 335	N	N	N	T 278

325-351	352-378	379-405	406-432	433-459	460-486
T 329	T 280	T 333	T 279	T 292	T 331
T 272	T 272	T 316	T 304	N	N
T 253	T 241	T 271	T 313	T 338	N
T 265	T 336	T 262	N	T 384	T 346
T 236	N	T 308	T 295	T 388	T 504
T 225	N	T 283	T 323	N	T 312
N	T 301	T 254	T 283	T 313	T 476
T 265	T 309	N	T 298	T 421	T 247
N	N	T 320	N	T 276	N
T 328	T 361	T 287	T 346	T 251	T 254
T 319	T 275	T 293	N	T 351	N
T 289	T 261	T 291	N	T 288	T 258
T 210	T 248	T 446	T 293	N	T 356
T 350	T 294	T 274	T 373	T 258	T 381
O	N	N	T 366	T 266	T 285
T 259	T 357	T 324	T 283	T 359	N
C 196	T 302	N	T 274	T 326	N
T 368	T 305	N	T 269	T 285	T 357
O	T 283	T 401	T 263	T 323	T 503
T 279	N	T 352	N	T 246	T 280
C 206	T 303	N	T 293	C 270	T 275
O	T 344	T 324	T 378	T 322	T 312
T 264	T 298	T 417	T 312	T 400	N
T 261	N	T 287	T 260	T 278	T 315
T 265	T 289	N	T 329	T 331	T 384
N	T 293	T 318	T 309	N	T 280
T 268	N	T 312	N	T 322	T 290

487-513	514-540	541-567	568-594	595-621	622-648
N	T 409	T 386	T 300	T 251	T 556
T 257	T 367	T 435	T 545	T 241	T 327
N	T 338	N	T 257	C 259	N
T 268	T 342	T 335	T 274	T 265	T 310
T 1137	T 310	T 341	T 350	T 407	T 327
T 670	N	T 399	T 308	N	N
T 266	T 402	T 301	N	T 279	T 304
T 277	T 335	T 360	T 268	N	T 304
T 236	T 518	T 462	N	N	T 329
T 236	T 290	N	T 282	T 375	T 332
C 284	C 280	N	T 463	T 304	T 305
T 370	T 292	T 396	T 402	T 255	T 390
T 334	T 312	T 383	T 329	T 290	N
T 287	T 288	T 310	T 267	N	T 293
T 332	N	N	N	T 276	T 379
T 282	T 365	T 368	T 283	T 466	T 343
T 271	T 290	T 317	T 346	T 275	T 308
N	T 326	T 330	T 306	N	T 297
N	T 291	T 411	T 278	N	T 269
T 285	T 291	N	T 342	T 417	T 274
T 306	T 265	T 309	T 356	N	N
T 449	N	T 370	N	T 275	T 320
T 399	T 399	T 295	T 298	T 319	T 333
T 251	T 450	T 340	T 395	T 282	T 372
N	N	T 360	T 272	N	T 278
T 388	T 414	N	T 427	T 364	T 345
T 374	N	T 262	T 292	T 359	N

T = Correct response to target
N = Correct nonresponse to nontarget
Green = Post-Commission-error correct response
O = Omission error
C = Commission error
U = User interrupt
A = Anticipatory response
M = Multiple response
H = Hardware interrupt

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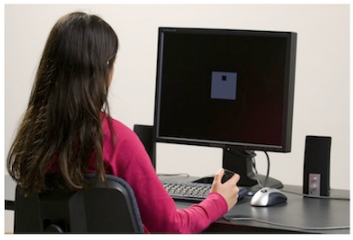


If you have questions about this report, please contact the person who provided it to you. For more information about attention and the T.O.V.A., please visit our website at https://www.tovatest.com/. To contact us please email info@tovatest.com or call 800.PAY.ATTN (562.594.7700).

ID: **1** **Example Subject** (Jan 1, 1975)
Male - 42y 11m 0d

Visual T.O.V.A. (v9.0-78 sn30000)
Dec 1, 2017 at 12:12 PM

Session, Response, and Performance Validity

This session meets session, response and performance validity criteria.

T.O.V.A. Interpretation

The results of this T.O.V.A. are within normal limits. Please see the Interpretation Notes page for additional information.

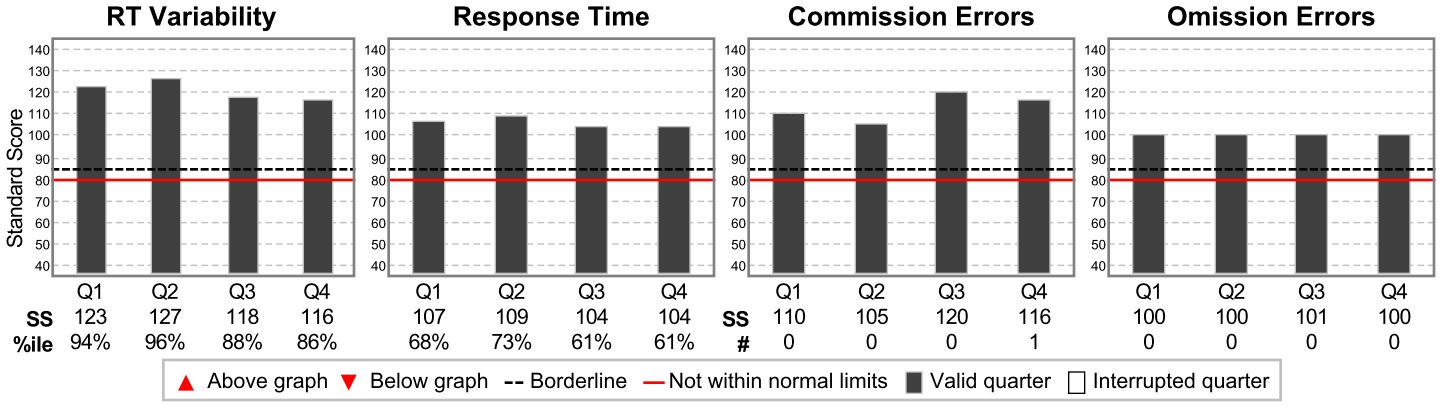
Treatment

20.0mg dose of Methylphenidate SR taken 2.2 hours before testing.

Comparison to the Normative Sample

These scores compare this subject's performance to the performance of individuals of the same gender and age in the T.O.V.A. Normative Sample, a study of individuals who did not have attention problems.

Results are reported as standard scores (average standard = 100; standard deviation = 15). Standard scores above 85 are considered to be in the normal range, scores between 80 and 85 are considered borderline, and scores below 80 are considered not within normal limits. Scores less than 70 are considered significantly below normal range. Standard scores less than 40 are more than 4 standard deviations from normal, and are denoted as "<40".



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	Quarter				Half		Total
	1	2	3	4	1	2	
RT Variability	123	127	118	116	140	122	126
Response Time	107	109	104	104	108	104	105
Commission Errors	110	105	120	116	115	120	120
Omission Errors	100	100	101	100	100	101	101
	Infrequent		Frequent				

Key: Borderline, Not within normal limits, Invalid

ID: **1** **Example Subject** (Jan 1, 1975)
Male - 42y 11m 0d

Visual T.O.V.A. (v9.0-78 sn30000)
Dec 1, 2017 at 12:12 PM

Session comments

Test to compare to visual baseline.

Session, Response, and Performance Validity

Performance Validity

Performance Validity is applicable only to outcomes that are not within normal limits.

Performance Validity is flagged to alert clinicians when there is unusually poor performance on the T.O.V.A. Only a clinician can determine if the test performance is consistent with (1) ADHD, (2) attention deficits due to traumatic brain injury, substance use disorders, sleep disorders, or other causes, or (3) poor effort, or (4) malingering. Higher numbers of flags indicate increasingly unusual patterns of performance and warrant more caution interpreting test performance. Special caution should be taken when the possibility of secondary gain exists. Performance Validity is only applicable to ages 17 or older.

Rule	Results	Flagged
Total omission errors greater than 30	0	0
Half 1 commission errors (CE) greater than 10	0	0
Half 2 response time (RT) skew greater than +150 ms	+46 ms	0
Half 2 CE RT minus RT greater than +75 ms	N/A: < 7 CEs	0
Total rules flagged:		0

Notes on the Comparison to the Normative Sample

Variability is a precise measure of variations in correct response times, and measures the consistency of response times. **Variability was within normal limits.**

Response Time is the average speed of correct responses to targets, and is a measure of information processing speed. **Response Time was within normal limits.**

Commission Errors occur when the subject incorrectly responds to a nontarget, and are a measure of inhibitory control. **Commission Errors were within normal limits.**

Omission Errors occur when the subject does not respond to a target, and are a measure of sustained attention. **Omission Errors were within normal limits.**

The overall test performance is within normal limits. However, the clinician must take into account other factors that may produce a false negative result, including use of medication, caffeine, nicotine, strong motivation, or other possible compensations.

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Visual T.O.V.A. (v9.0-78 sn30000)
Dec 1, 2017 at 12:12 PM

Treatment

20.0mg dose of Methylphenidate SR taken 2.2 hours before testing.

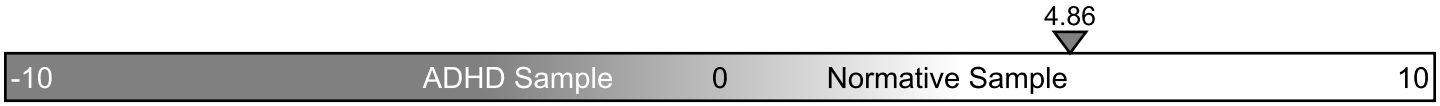
Attention Comparison Score

The Attention Comparison Score (ACS) is a subset of T.O.V.A. variables used to compare the subject's performance to a sample of individuals independently diagnosed with ADHD. Scores below 0 suggest a performance more similar to that of individuals with ADHD.

Note that the ACS does not include important variables from the Comparison to the Normative Sample. In order to understand the overall test results, the ACS should always be used with the Comparison to the Normative Sample, found on the Summary page. In particular, when the ACS is above zero and the Comparison to the Normative Sample is not within normal limits, the results should be considered not within normal limits.

The ACS is calculated by summing the following Z scores:

Response Time (Half 1)	0.56
D Prime (Half 2)	0.79
Variability (Total)	1.71
Calibration constant	1.80
Attention Comparison Score	4.86



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Dec 1, 2017 at 12:12 PM

This page contains tabulated raw data and documents T.O.V.A. session parameters.

		Quarter				Half		Total
		1	2	3	4	1	2	
RT Variability	ms	34	33	47	48	34	48	46
Response Time	ms	343	341	319	310	342	315	321
Post-commission responses	#	0	0	0	1	0	1	1
Response Time	ms	0	0	0	329	0	329	329
Variability	ms	0	0	0	0	0	0	0
Commission Errors	#	0/126	0/126	0/36	1/36	0/252	1/72	1/324
Percentage	%	0	0	0	2.8	0	1.4	0.3
Response Time	ms	0	0	0	301	0	301	301
Omission Errors	#	0/36	0/36	0/126	0/126	0/72	0/252	0/324
Percentage	%	0	0	0	0	0	0	0
D Prime		8.53	8.53	8.53	6.18	8.53	6.47	7
Standard Score		114	111	126	108	122	112	113
Beta		1	1	1	0	1	0	0
Anticipatory	%	0	0	0	0	0	0	0
To Nontargets	#	0	0	0	0	0	0	0
To Targets	#	0	0	0	0	0	0	0
Multiple Responses	#	0	0	0	0	0	0	0
Total Correct	#	162/162	162/162	162/162	161/162	324/324	323/324	647/648
Percentage	%	100	100	100	99.4	100	99.7	99.8
Skew	ms	8	16	8	15	6	46	12
User Interrupts	#	0	0	0	0	0	0	0
Hardware errors	#	0	0	0	0	0	0	0
		Infrequent		Frequent				

Session parameters

Format:	1 (standard)
ISI:	2000 ms
Stimulus On Time:	200 ms
Stimulus Off Time:	300 ms
Anticipatory Cutoff	150 ms

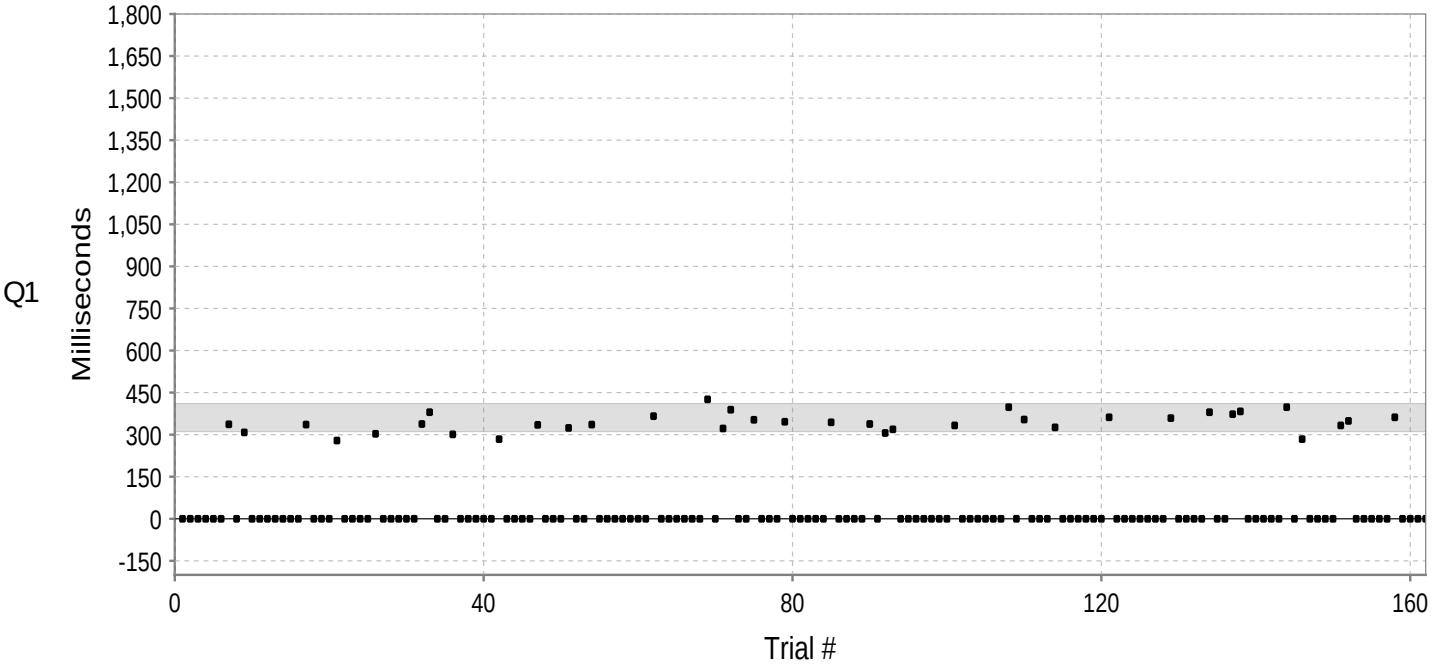
Session information

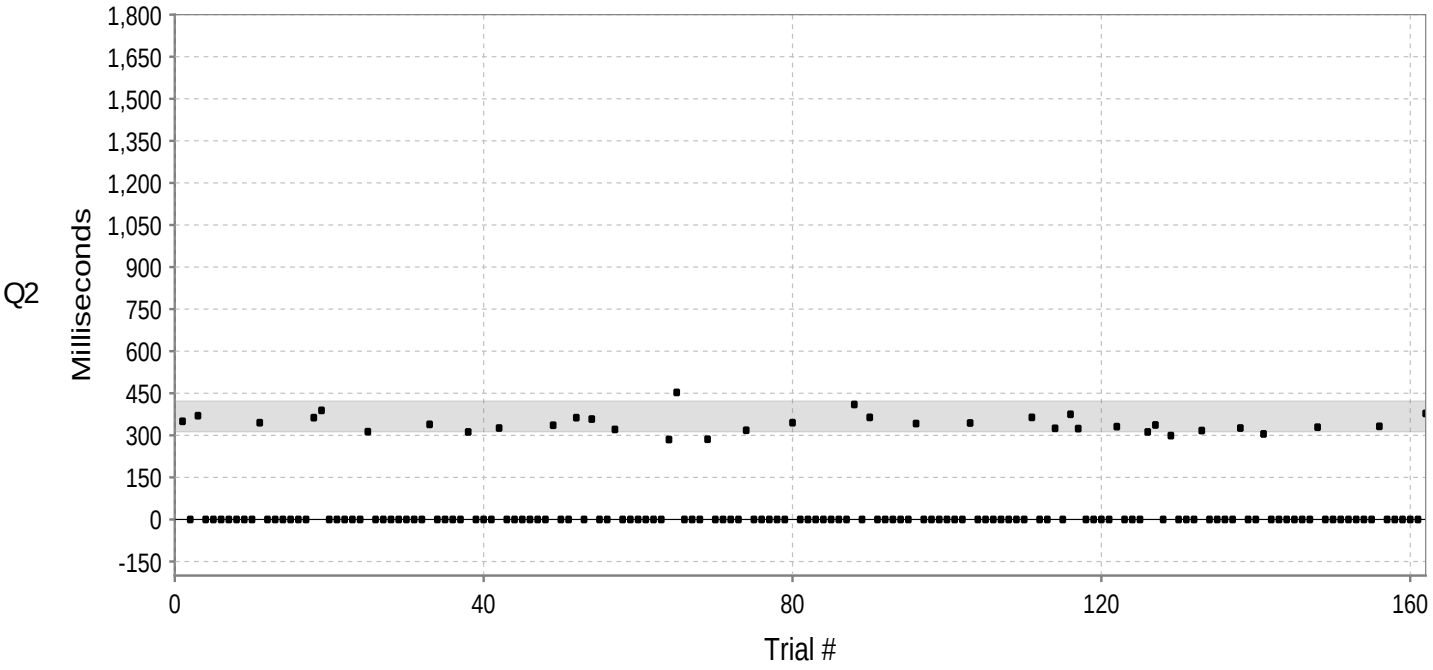
Tester:	
Import Filename:	example-treament-42m.tova (1 / 2)
Import Date:	Aug 23, 2022 11:51:30 AM
Errors/Warnings:	

ID: **1** **Example Subject** (Jan 1, 1975)
Male - 42y 11m 0d

Visual T.O.V.A. (v9.0-78 sn30000)
Dec 1, 2017 at 12:12 PM

This page graphically displays the subject's responses. Black squares mark correct responses and correct nonresponses. Red 'X's mark commission errors, red squares mark anticipatory responses, and underlined red circles mark omission errors. The light gray region represents the normative range of responses. Commission errors followed by a correct response are linked by a line: an upward slope (light gray) indicates slowing down following an error (typical), and a downward slope (black) indicates speeding up after making an error (unusual). Red numbers above the zero line indicate the number of missed targets (if three or more in a row), and the red number below the zero line indicates the number of seconds elapsed between correct target responses.



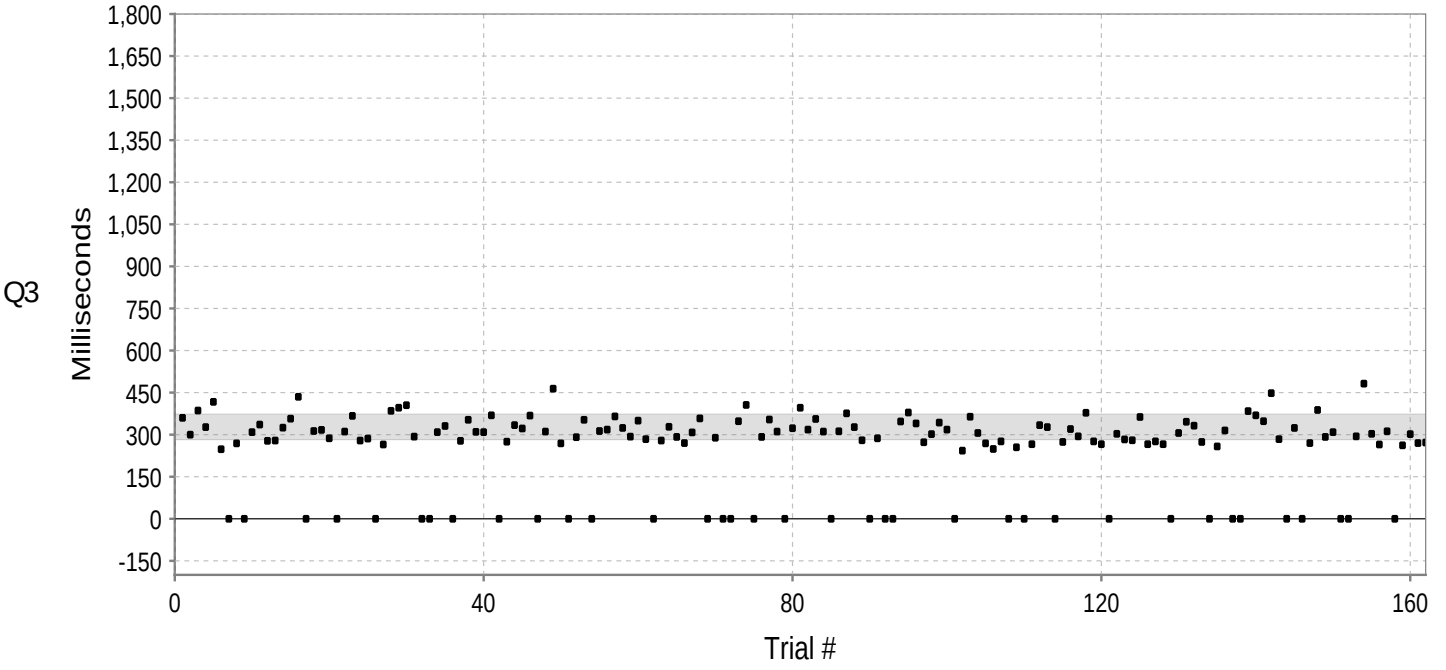


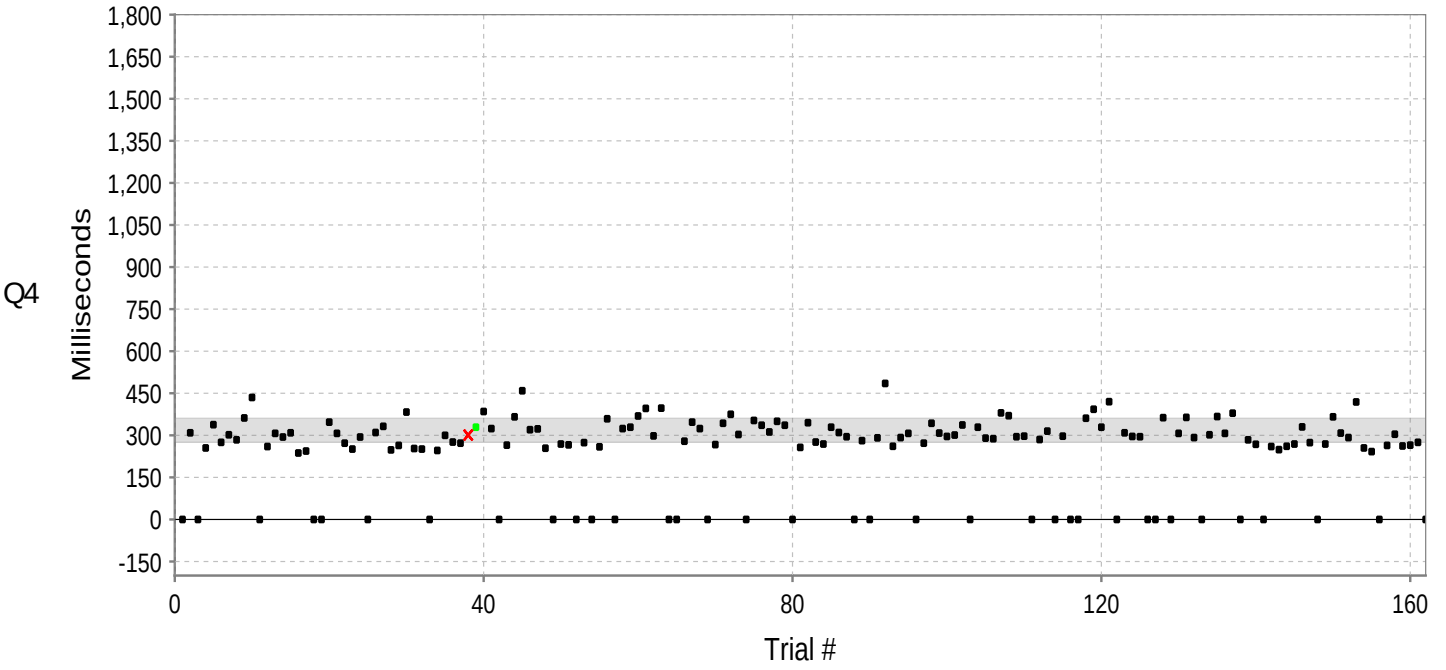
Correct response · Correct non-response · Commission error · Omission error · Anticipatory response
Post-commission error correct response · Slower post-commission RT · Faster post-commission RT
Off-scale resp./error · Normative range · Interruption · 3 10s Response gap (# Targets and Sec)

ID: **1** **Example Subject** (Jan 1, 1975)
Male - 42y 11m 0d

Visual T.O.V.A. (v9.0-78 sn30000)
Dec 1, 2017 at 12:12 PM

This page graphically displays the subject's responses. Black squares mark correct responses and correct nonresponses. Red 'X's mark commission errors, red squares mark anticipatory responses, and underlined red circles mark omission errors. The light gray region represents the normative range of responses. Commission errors followed by a correct response are linked by a line: an upward slope (light gray) indicates slowing down following an error (typical), and a downward slope (black) indicates speeding up after making an error (unusual). Red numbers above the zero line indicate the number of missed targets (if three or more in a row), and the red number below the zero line indicates the number of seconds elapsed between correct target responses.





Correct response · Correct non-response · Commission error · Omission error · Anticipatory response
Post-commission error correct response · Slower post-commission RT · Faster post-commission RT
Off-scale resp./error · Normative range · Interruption · 3 10s Response gap (# Targets and Sec)

TOVA — Raw Data Tables

ID: **1** **Example Subject** (Jan 1, 1975)
Male - 42y 11m 0d

Visual T.O.V.A. (v9.0-78 sn30000)
Dec 1, 2017 at 12:12 PM

This page shows a trial-by-trial view of T.O.V.A. test data. Each entry in the table indicates the stimulus type (target or nontarget) and the subject's response to that stimulus. Error responses are shown in red, and response times are in milliseconds. A negative response time indicates a response that was made before the stimulus was presented.

1-27	28-54	55-81	82-108	109-135	136-162
N	N	N	N	N	N
N	N	N	N	T 354	T 373
N	N	N	N	N	T 383
N	N	N	T 344	N	N
N	T 338	N	N	N	N
N	T 380	N	N	T 326	N
T 337	N	N	N	N	N
N	N	T 366	N	N	N
T 308	T 301	N	T 338	N	T 398
N	N	N	N	N	N
N	N	N	T 306	N	T 284
N	N	N	T 319	N	N
N	N	N	N	T 362	N
N	N	N	N	N	N
N	T 284	T 426	N	N	N
N	N	N	N	N	T 333
T 336	N	T 322	N	N	T 349
N	N	T 389	N	N	N
N	N	N	N	N	N
N	T 335	N	T 333	N	N
T 279	N	T 353	N	T 359	N
N	N	N	N	N	N
N	N	N	N	N	T 362
N	T 324	N	N	N	N
N	N	T 346	N	N	N
T 303	N	N	N	T 380	N
N	T 336	N	T 398	N	N

163-189	190-216	217-243	244-270	271-297	298-324
T 350	N	N	N	N	N
N	N	N	N	N	N
T 370	N	T 321	N	T 364	T 326
N	N	N	N	N	N
N	N	N	N	N	N
N	T 339	N	N	T 325	T 305
N	N	N	T 410	N	N
N	N	N	N	T 375	N
N	N	N	T 364	T 324	N
N	N	T 285	N	N	N
T 345	T 312	T 453	N	N	N
N	N	N	N	N	N
N	N	N	N	N	T 329
N	N	N	N	T 331	N
N	T 326	T 286	T 342	N	N
N	N	N	N	N	N
N	N	N	N	N	N
T 363	N	N	N	T 312	N
T 389	N	N	N	T 337	N
N	N	T 318	N	N	N
N	N	N	N	T 299	T 332
N	T 336	N	T 344	N	N
N	N	N	N	N	N
N	N	N	N	N	N
T 313	T 363	N	N	T 317	N
N	N	T 345	N	N	N
N	T 358	N	N	N	T 378

325-351	352-378	379-405	406-432	433-459	460-486
T 360	T 385	T 313	T 318	T 255	T 315
T 300	T 396	T 318	T 356	N	N
T 386	T 405	T 365	T 311	T 266	N
T 327	T 293	T 324	N	T 334	T 384
T 417	N	T 293	T 312	T 327	T 369
T 248	N	T 350	T 376	N	T 348
N	T 309	T 284	T 327	T 274	T 448
T 269	T 331	N	T 280	T 320	T 284
N	N	T 279	N	T 294	N
T 309	T 278	T 328	T 287	T 378	T 324
T 336	T 353	T 292	N	T 276	N
T 278	T 310	T 270	N	T 266	T 270
T 279	T 309	T 308	T 347	N	T 388
T 325	T 369	T 358	T 379	T 303	T 292
T 357	N	N	T 340	T 283	T 309
T 435	T 275	T 289	T 273	T 280	N
N	T 334	N	T 302	T 363	N
T 313	T 322	N	T 343	T 266	T 294
T 317	T 368	T 348	T 318	T 276	T 482
T 287	N	T 406	N	T 266	T 303
N	T 311	N	T 243	N	T 265
T 311	T 464	T 292	T 364	T 306	T 312
T 367	T 269	T 354	T 306	T 346	N
T 279	N	T 311	T 269	T 332	T 262
T 286	T 291	N	T 249	T 274	T 302
N	T 353	T 323	T 276	N	T 270
T 265	N	T 396	N	T 258	T 272

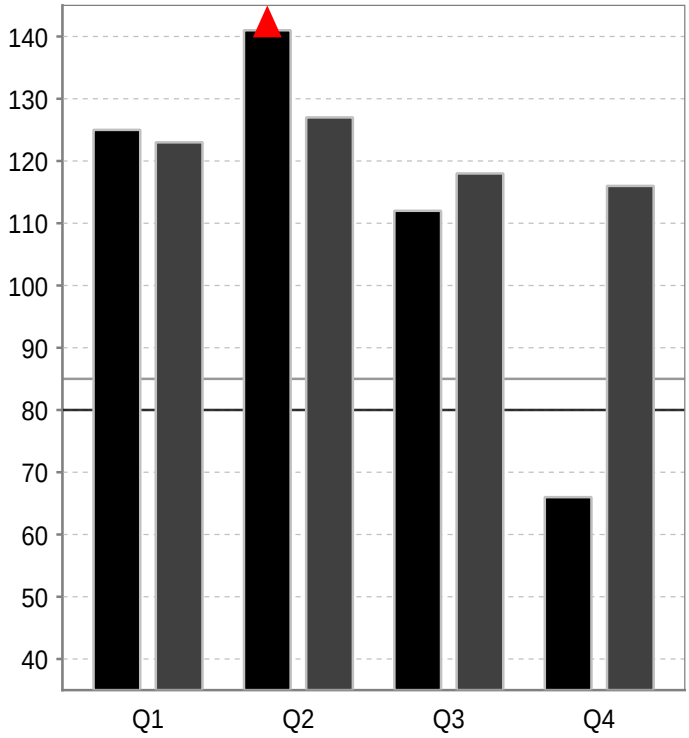
487-513	514-540	541-567	568-594	595-621	622-648
N	T 248	T 259	T 345	T 295	T 307
T 309	T 264	T 359	T 276	T 297	T 379
N	T 383	N	T 269	N	N
T 255	T 253	T 324	T 329	T 285	T 284
T 338	T 251	T 329	T 310	T 315	T 268
T 275	N	T 369	T 295	N	N
T 302	T 246	T 396	N	T 297	T 260
T 284	T 300	T 298	T 281	N	T 249
T 362	T 276	T 397	N	N	T 261
T 435	T 272	N	T 291	T 361	T 269
N	C 301	N	T 485	T 393	T 330
T 260	T 329	T 279	T 261	T 329	T 274
T 307	T 385	T 347	T 292	T 420	N
T 294	T 324	T 324	T 307	N	T 269
T 309	N	N	N	T 309	T 366
T 237	T 265	T 267	T 272	T 296	T 308
T 244	T 366	T 343	T 343	T 295	T 292
N	T 459	T 375	T 308	N	T 419
N	T 320	T 303	T 296	N	T 255
T 347	T 323	N	T 301	T 363	T 242
T 307	T 254	T 353	T 337	N	N
T 272	N	T 336	N	T 307	T 264
T 251	T 269	T 312	T 329	T 364	T 304
T 294	T 266	T 350	T 290	T 292	T 262
N	N	T 336	T 288	N	T 265
T 310	T 274	N	T 380	T 302	T 275
T 332	N	T 257	T 370	T 367	N

T = Correct response to target
N = Correct nonresponse to nontarget
Green = Post-Commission-error correct response
O = Omission error
C = Commission error
U = User interrupt
A = Anticipatory response
M = Multiple response
H = Hardware interrupt

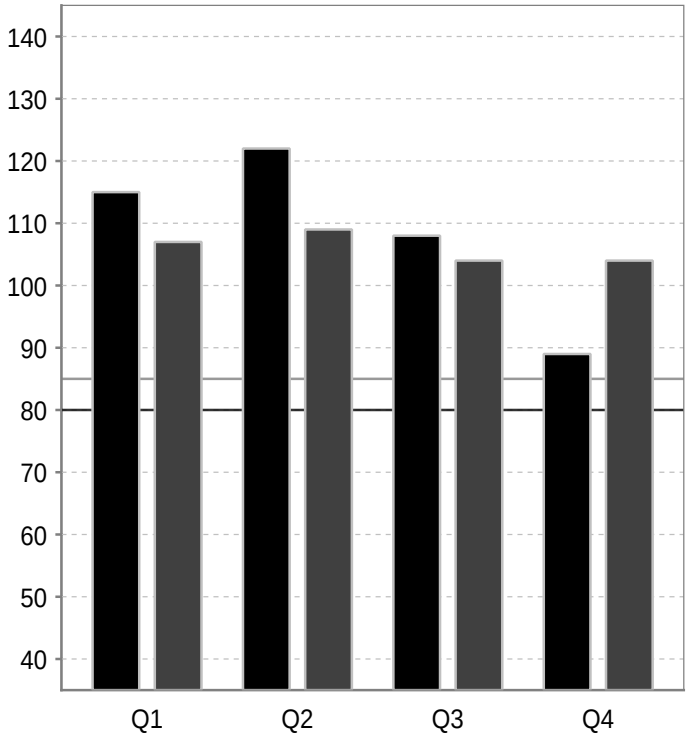
TOVA Standard Comparison Graphs

- Example Subject, 42.5 y, Jul 1, 2017 8:10 AM, Visual
- Example Subject, 42.92 y, Dec 1, 2017 12:12 PM, Visual, Methylphenidate SR(20.0mg)

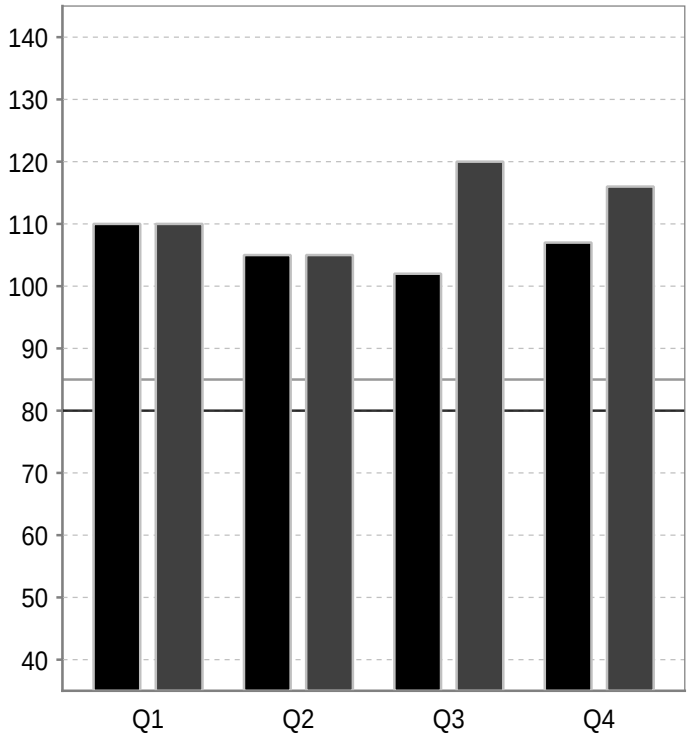
RT Variability



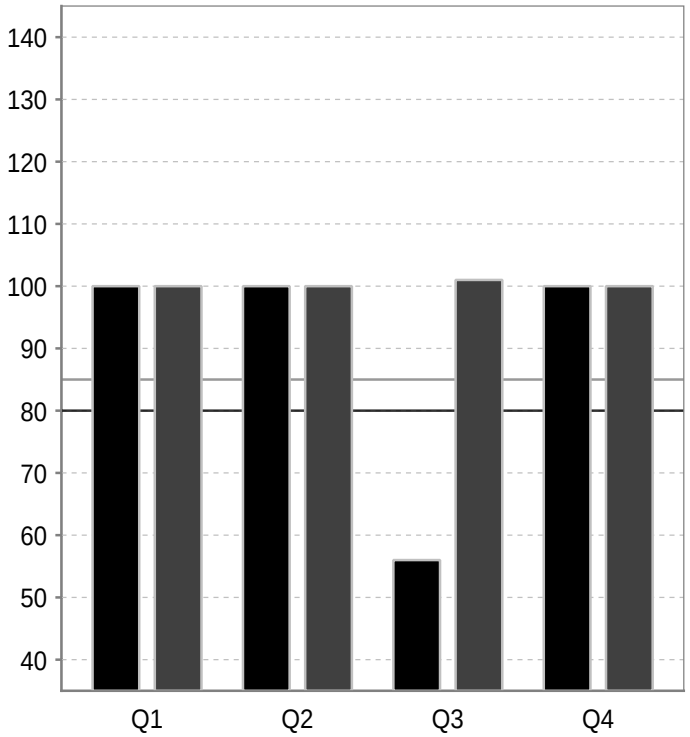
Response Time



Commission Errors

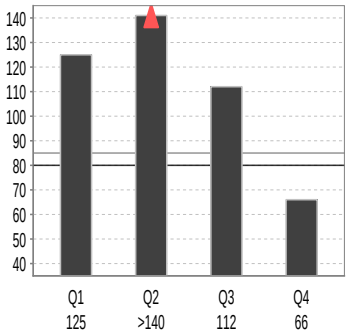


Omission Errors

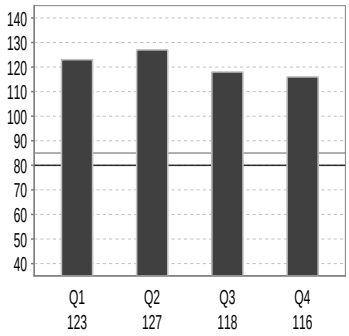


Example Subject 42.5 y, 7/1/17 8:10 AM Visual No challenge	Example Subject 42.92 y, 12/1/17 12:12 PM Visual Methylphenidate SR(20.0mg)

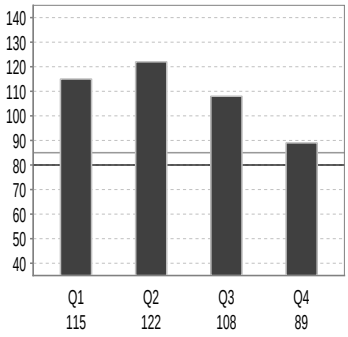
RT Variability



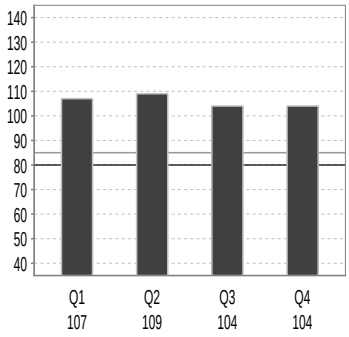
RT Variability



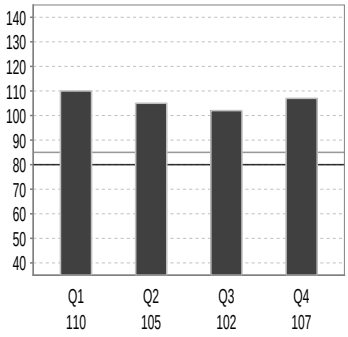
Response Time



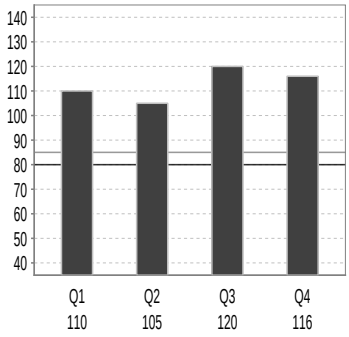
Response Time



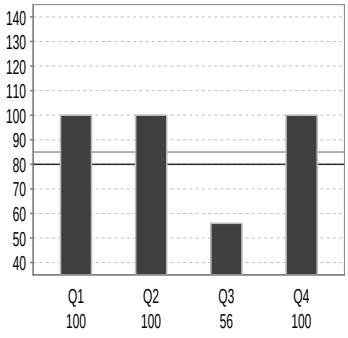
Commission Errors



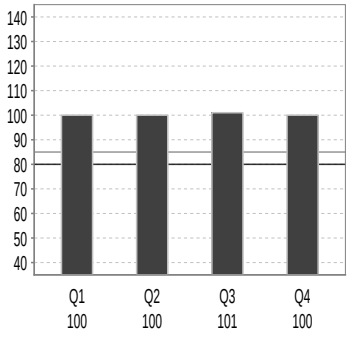
Commission Errors



Omission Errors

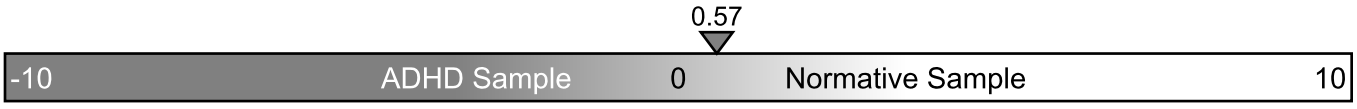


Omission Errors



A: Example Subject, 42.5 y, 7/1/17 8:10 AM, Visual, No challenge
B: Example Subject, 42.92 y, 12/1/17 12:12 PM, Visual, Methylphenidate SR(20.0mg)

A:



B: