CONNERS CATA™
Continuous Auditory Test of Attention™

C. Keith Conners, Ph.D.

Progress Report

Name/ID:	Jessica Sample		
Gender:	Female		
Birth Date:	January 5, 1989		
Normative Option:	Gender Specific norms		

	Admin 1	**Admin 2**	**Admin 3**
Name/ID:	Jessica Sample	Jessica Sample	Jessica Sample
Administration Date:	November 20, 2013	January 22, 2014	February 27, 2014
Age:	25 years	25 years	25 years
Input Device:	Keyboard	Keyboard	Keyboard
Assessor's Name:	Dr. Smith	Dr. Smith	Dr. Smith
Medication/Notes:			

This Progress Report is intended for use by qualified assessors only, and is not to be shown or presented to the respondent or any other unqualified individuals or used as the sole basis for clinical diagnosis or intervention. Administrators are cautioned against drawing unsupported interpretations. To obtain a comprehensive view of the individual, information from this report should be combined with information gathered from other psychometric measures, interviews, observations, and available records. This report is based on an algorithm that produces the most common interpretations of the obtained scores. Additional interpretive information is found in the *Conners CATA Manual* (published by MHS).

The Conners Continuous Auditory Test of Attention (Conners CATA™) assesses auditory processing and attention-related problems in individuals aged 8 years and older. During the 14-minute, 200-trial administration, respondents are presented with high-tone sounds that are either preceded by a low-tone warning sound (warned trials) or played alone (unwarned trials). Respondents are instructed to respond only to high-tone sounds on warned trials, and to ignore those on unwarned trials. By indexing the respondent's performance in areas of inattentiveness, impulsivity, and sustained attention, the Conners CATA can be a useful adjunct to the process of diagnosing Attention-Deficit/Hyperactivity Disorder (ADHD) and other neurological conditions related to auditory attention. This report combines the results of up to four administrations to help the user interpret important changes that have occurred over time. Please note that this Progress Report is intended to provide an overview of how scores have changed over time. For detailed information about any given administration, please refer to the Conners CATA Assessment Reports.

Validity of Administration

The Conners CATA performs a validity check based on the number of hits and omission errors committed, as well as a self-diagnostic check of the accuracy of the timing of each administration. If there is an insufficient number of hits to compute scores, and/or if the omission error rate exceeds 25%, these issues will be noted. Also, the program will issue a warning message noting that the administration was invalid if a timing issue is detected.

Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)
Valid	Valid	Valid

There was no indication of any timing difficulties for Admin 1, Admin 2, and Admin 3.

Response Style Analysis

The variable *C* represents an individual's natural response style in tasks that involve a speed-accuracy trade-off. Jessica's response style and its influence on other Conners CATA scores, should be taken into consideration throughout the interpretation process for each administration.

	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)
T-score (CI)	62 (58-66)	43 (39-47)	58 (54-62)
Classification	Conservative	Balanced	Balanced
Interpretation	Emphasizes accuracy over speed	Balanced response style between speed and accuracy	Balanced response style between speed and accuracy

Note. CI = Confidence Interval.

T-score Guidelines

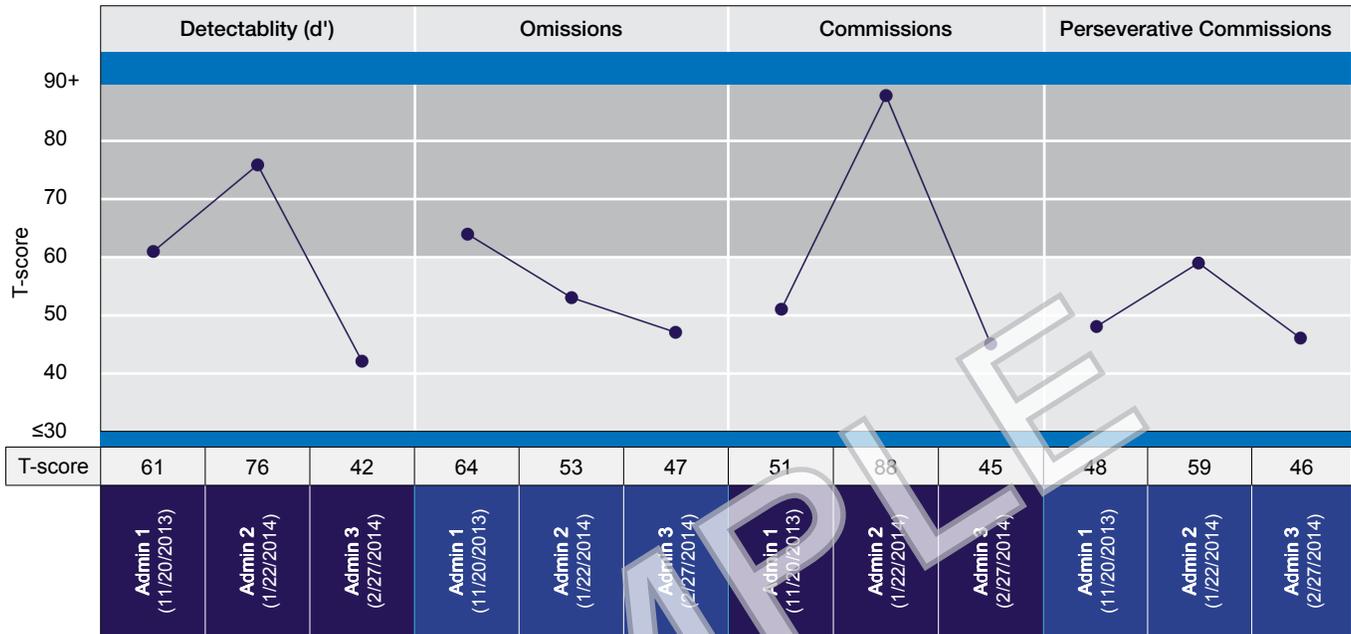The guidelines in the following table apply to all T-scores in this report.

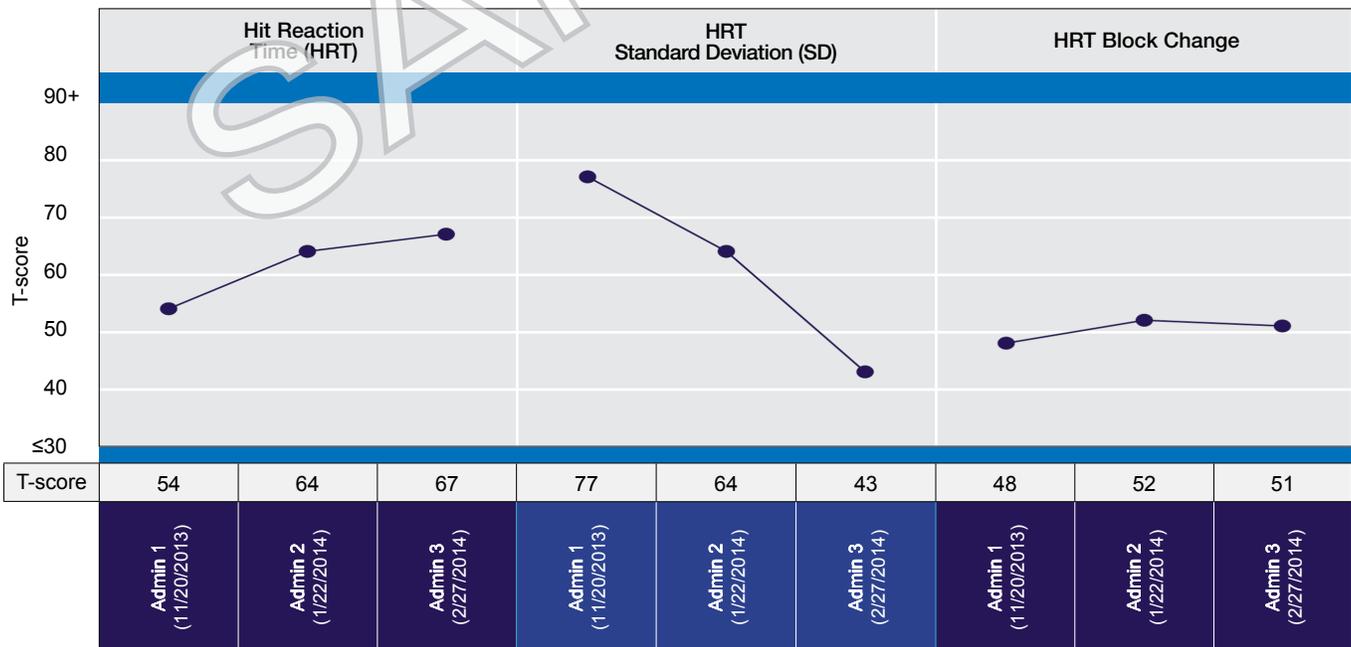| Guidelines			
T-score	For Hit Reaction Time (HRT)	T-score	For all other variables
70+	**Atypically Slow**	70+	**Very Elevated**
60-69	**Slow**	60-69	**Elevated**
55-59	A Little Slow	55-59	High Average
45-54	Average	45-54	Average
40-44	**A Little Fast**	< 45	Low
< 40	**Atypically Fast**		

MHS

This section provides an overview of Jessica's Conners CATA scores across administrations.

Measures of Detectability and Errors

	Detectablity (d')			Omissions			Commissions			Perseverative Commissions		
T-score	61	76	42	64	53	47	51	88	45	48	59	46
	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)

Measures Involving Reaction Times

	Hit Reaction Time (HRT)			HRT Standard Deviation (SD)			HRT Block Change		
T-score	54	64	67	77	64	43	48	52	51
	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)

Conners CATA Report: Jessica Sample

⊠ **MHS**

Overview Summary

The following table summarizes the aspect(s) of attention Jessica may have had problems with at each administration.

Area	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)
Inattentiveness Problems	Strong Indication	Strong Indication	Some Indication
Impulsivity Problems	No Indication	No Indication	No Indication
Sustained Attention Problems	No Indication	No Indication	No Indication

The following tables summarize Jessica's Conners CATA scores across administrations. If a statistical difference is noted between a pair of administrations, then the difference reached statistical significance (p < .10) and/or was at least 10 T-score points (1 Standard Deviation) apart. Statistical significance is denoted with this symbol (°).

Notes. T = T-score; CI = 90% Confidence Interval; Guide = Guideline.

Measures of Detectability and Errors

Score	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)	Statistical Differences in T-scores		
				Overall (1 to 3)	Admin 1 to 2	Admin 2 to 3
Detectability (d'): Ability to differentiate targets from non-targets						
T (CI)	61 (57-65)	76 (72-80)	42 (38-46)	Increased ability°	Decreased ability°	Increased ability°
Percentile	86th	99th	23rd			
Guide	Elevated	Very Elevated	Low			
Omissions: Rate of missed targets						
T (CI)	64 (62-66)	53 (51-55)	47 (45-49)	Decreased error rate°	Decreased error rate°	No Change
Percentile	91st	81st	56th			
Guide	Elevated	Average	Average			
Commissions: Rate of incorrect responses to non-targets						
T (CI)	51 (47-55)	88 (84-92)	45 (41-49)	No Change	Increased error rate°	Decreased error rate°
Percentile	76th	97th	19th			
Guide	Average	Very Elevated	Average			
Perseverative Commissions: Rate of incorrect responses occurring before targets						
T (CI)	48 (46-50)	59 (57-61)	46 (44-48)	No Change	Increased error rate°	Decreased error rate°
Percentile	64th	94th	28th			
Guide	Average	High Average	Average			

The following tables summarize Jessica's Conners CATA scores across administrations. If a statistical difference is noted between a pair of administrations, then the difference reached statistical significance (p < .10) and/or was at least 10 T-score points (1 Standard Deviation) apart. Statistical significance is denoted with this symbol (°).
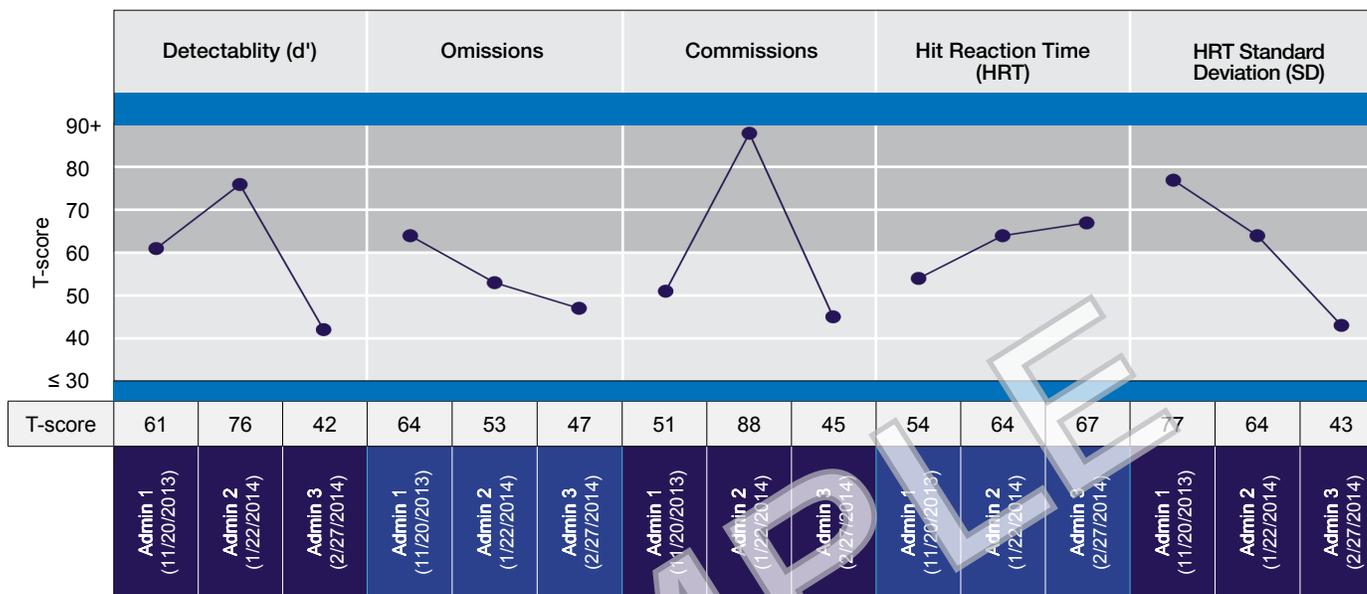
Notes. T = T-score; CI = 90% Confidence Interval; Guide = Guideline.

Measures Involving Reaction Times

Score	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)	Statistical Differences in T-scores		
				Overall (1 to 3)	Admin 1 to 2	Admin 2 to 3
Hit Reaction Time (HRT): Mean response speed across the administration						
T (CI)	54 (53-55)	64 (63-65)	67 (66-68)	Slower	Slower	No Change
Percentile	69th	95th	97th			
Guide	Average	Slow	Slow			
HRT Standard Deviation (SD): Reaction times consistency across the administration						
T (CI)	77 (73-81)	64 (60-68)	43 (39-47)	More Consistent°	More Consistent	More Consistent°
Percentile	98th	87th	24th			
Guide	Very Elevated	Elevated	Low			
HRT Block Change: Change in average response speed across blocks						
T (CI)	48 (43-53)	52 (47-57)	51 (46-56)	No Change	No Change	No Change
Percentile	42nd	63rd	58th			
Guide	Average	Average	Average			

Measures of Inattentiveness

This section summarizes Jessica's scores on the inattentiveness measures across administrations. If a statistical difference is noted between a pair of administrations, then the difference reached statistical significance ($p < .10$) and/or was at least 10 T-score points (1 Standard Deviation) apart. Statistical significance is denoted with this symbol (°).

	Detectablity (d')			Omissions			Commissions			Hit Reaction Time (HRT)			HRT Standard Deviation (SD)		
T-score	61	76	42	64	53	47	51	88	45	54	64	67	77	64	43
	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)

Detectability (d') measures the respondent's ability to differentiate non-targets (i.e., the high-tone sound on unwarned trials) from targets (i.e., the high-tone sound on warned trials). Higher T-scores indicate worse performance. The following T-scores were obtained: Admin 1 (T = 61; 90% CI = 57-65; 86th percentile; Elevated), Admin 2 (T = 76; 90% CI = 72-80; 99th percentile; Very Elevated), and Admin 3 (T = 42; 90% CI = 38-46; 23rd percentile; Low). Scores on this variable statistically increased across: Admin 1 to Admin 2°. Scores on this variable statistically decreased across: Admin 1 to Admin 3° and Admin 2 to Admin 3°.

Omissions result from a failure to respond to targets. Higher T-scores indicate worse performance. The following T-scores were obtained: Admin 1 (T = 64; 90% CI = 62-66; 91st percentile; Elevated), Admin 2 (T = 53; 90% CI = 51-55; 81st percentile; Average), and Admin 3 (T = 47; 90% CI = 45-49; 56th percentile; Average). Scores on this variable statistically decreased across: Admin 1 to Admin 3° and Admin 1 to Admin 2°.

Commissions are made when responses are given to non-targets. Higher T-scores indicate worse performance. The following T-scores were obtained: Admin 1 (T = 51; 90% CI = 47-55; 76th percentile; Average), Admin 2 (T = 88; 90% CI = 84-92; 97th percentile; Very Elevated), and Admin 3 (T = 45; 90% CI = 41-49; 19th percentile; Average). Scores on this variable statistically increased across: Admin 1 to Admin 2°. Scores on this variable statistically decreased across: Admin 2 to Admin 3°.
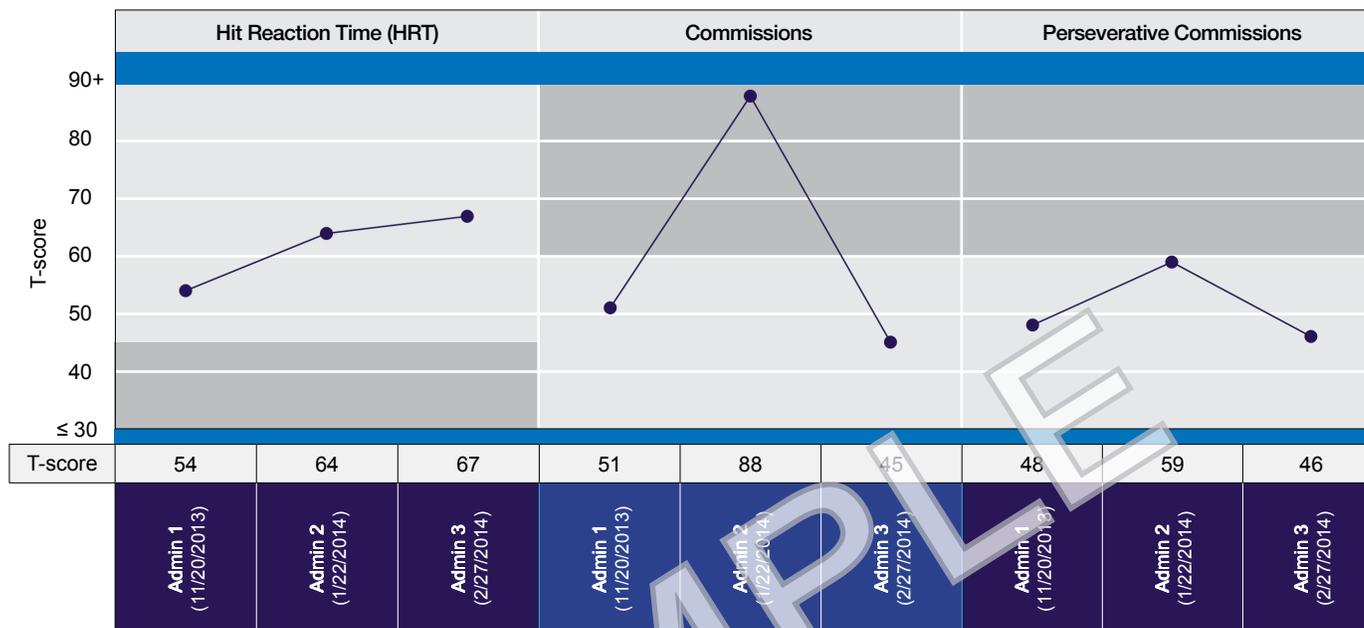
HRT is the mean response speed of correct responses for the whole administration. Higher T-scores indicate slower responses. The following T-scores were obtained: Admin 1 (T = 54; 90% CI = 53-55; 69th percentile; Average), Admin 2 (T = 64; 90% CI = 63-65; 95th percentile; Slow), and Admin 3 (T = 67; 90% CI = 66-68; 97th percentile; Slow). Scores on this variable statistically increased across: Admin 1 to Admin 3 and Admin 1 to Admin 2.

HRT SD is a measure of response speed consistency during the entire administration. Higher T-scores indicate less consistency. The following T-scores were obtained: Admin 1 (T = 77; 90% CI = 73-81; 98th percentile; Very Elevated), Admin 2 (T = 64; 90% CI = 60-68; 87th percentile; Elevated), and Admin 3 (T = 43; 90% CI = 39-47; 24th percentile; Low). Scores on this variable statistically decreased across: Admin 1 to Admin 3°, Admin 1 to Admin 2, and Admin 2 to Admin 3°.

Jessica's profile of scores on the above measures strongly suggests that she may have had problems with inattentiveness during Admin 1 and Admin 2. Jessica's profile of scores on the above measures suggests that she may have had problems with inattentiveness during Admin 3.

This section summarizes Jessica's scores on the impulsivity measures across administrations. If a statistical difference is noted between a pair of administrations, then the difference reached statistical significance ($p < .10$) and/or was at least 10 T-score points (1 Standard Deviation) apart. Statistical significance is denoted with this symbol (°).

	Hit Reaction Time (HRT)			Commissions			Perseverative Commissions		
T-score	54	64	67	51	88	45	48	59	46
	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)

HRT is the mean response speed of correct responses for the whole administration. Lower T-scores indicate faster responses. The following T-scores were obtained: Admin 1 (T = 54; 90% CI = 53-55; 69th percentile; Average), Admin 2 (T = 64; 90% CI = 63-65; 95th percentile; Slow), and Admin 3 (T = 67; 90% CI = 66-68; 97th percentile; Slow). Scores on this variable statistically increased across: Admin 1 to Admin 3 and Admin 1 to Admin 2.
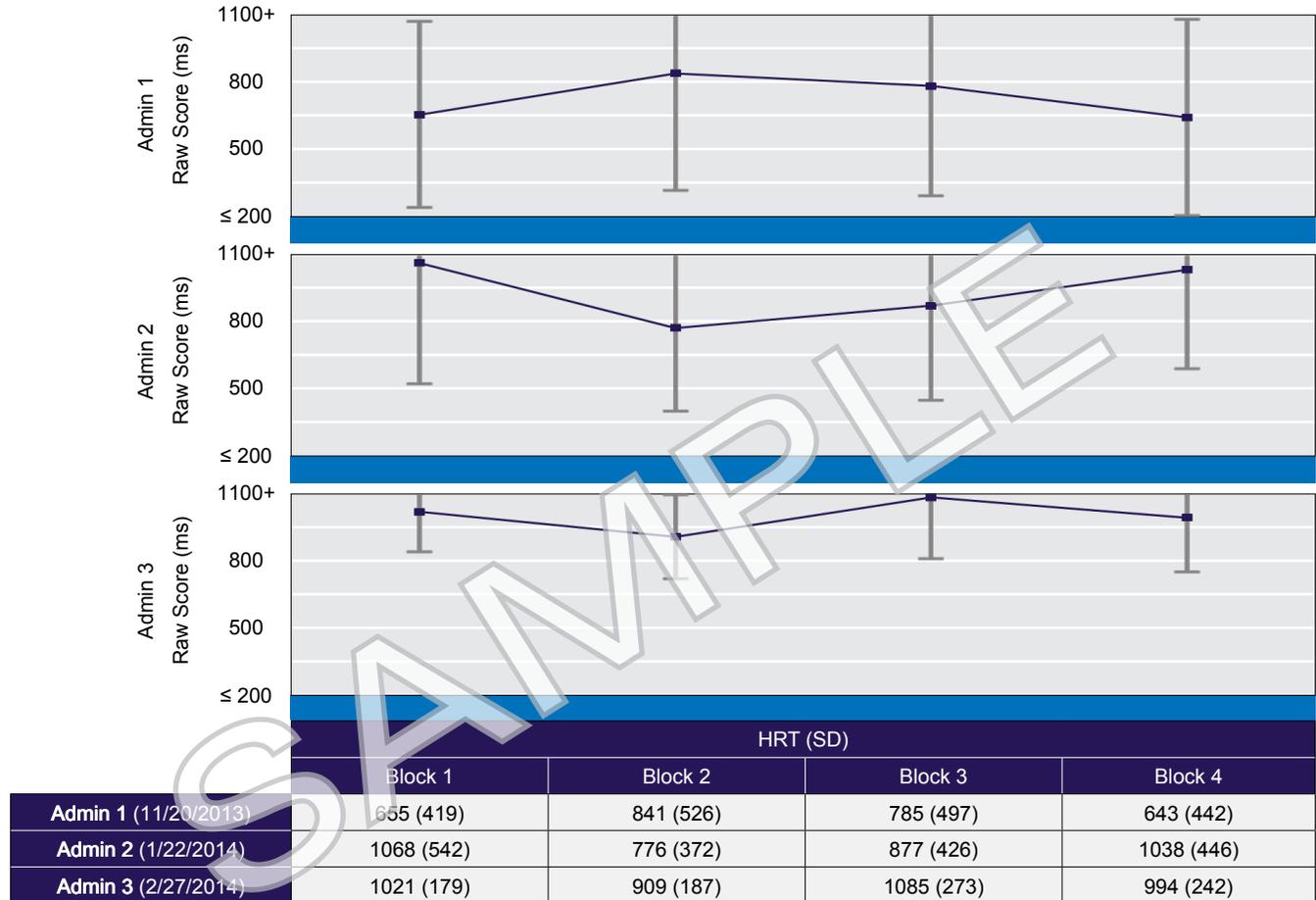
Commissions are made when responses are given to non-targets. Higher T-scores indicate worse performance. The following T-scores were obtained: Admin 1 (T = 51; 90% CI = 47-55; 76th percentile; Average), Admin 2 (T = 88; 90% CI = 84-92; 97th percentile; Very Elevated), and Admin 3 (T = 45; 90% CI = 41-49; 19th percentile; Average). Scores on this variable statistically increased across: Admin 1 to Admin 2°. Scores on this variable statistically decreased across: Admin 2 to Admin 3°.

Perseverative Commissions are incorrect responses that were made before the target sound. The following T-scores were obtained: Admin 1 (T = 48; 90% CI = 46-50; 64th percentile; Average), Admin 2 (T = 59; 90% CI = 57-61; 94th percentile; High Average), and Admin 3 (T = 46; 90% CI = 44-48; 28th percentile; Average). Scores on this variable statistically increased across: Admin 1 to Admin 2°. Scores on this variable statistically decreased across: Admin 2 to Admin 3°.

Jessica's profile of scores did not indicate impulsivity during Admin 1, Admin 2, and Admin 3.
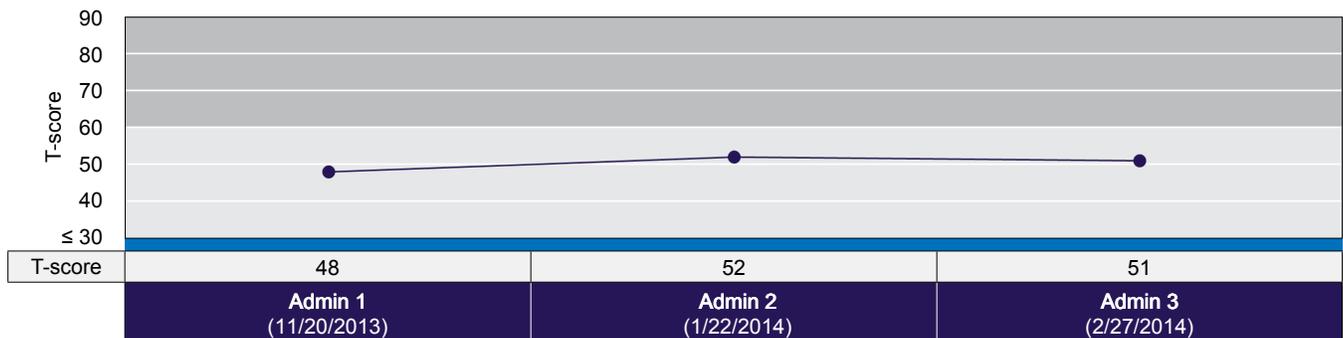
MHS

This section summarizes Jessica's scores on the sustained attention measures across administrations. For Hit Reaction Time (HRT) Block Change, if a statistical difference is noted, then the difference reached statistical significance ($p < .10$) and/or was at least 10 T-score points (1 Standard Deviation) apart. Statistical significance is denoted with this symbol (°).
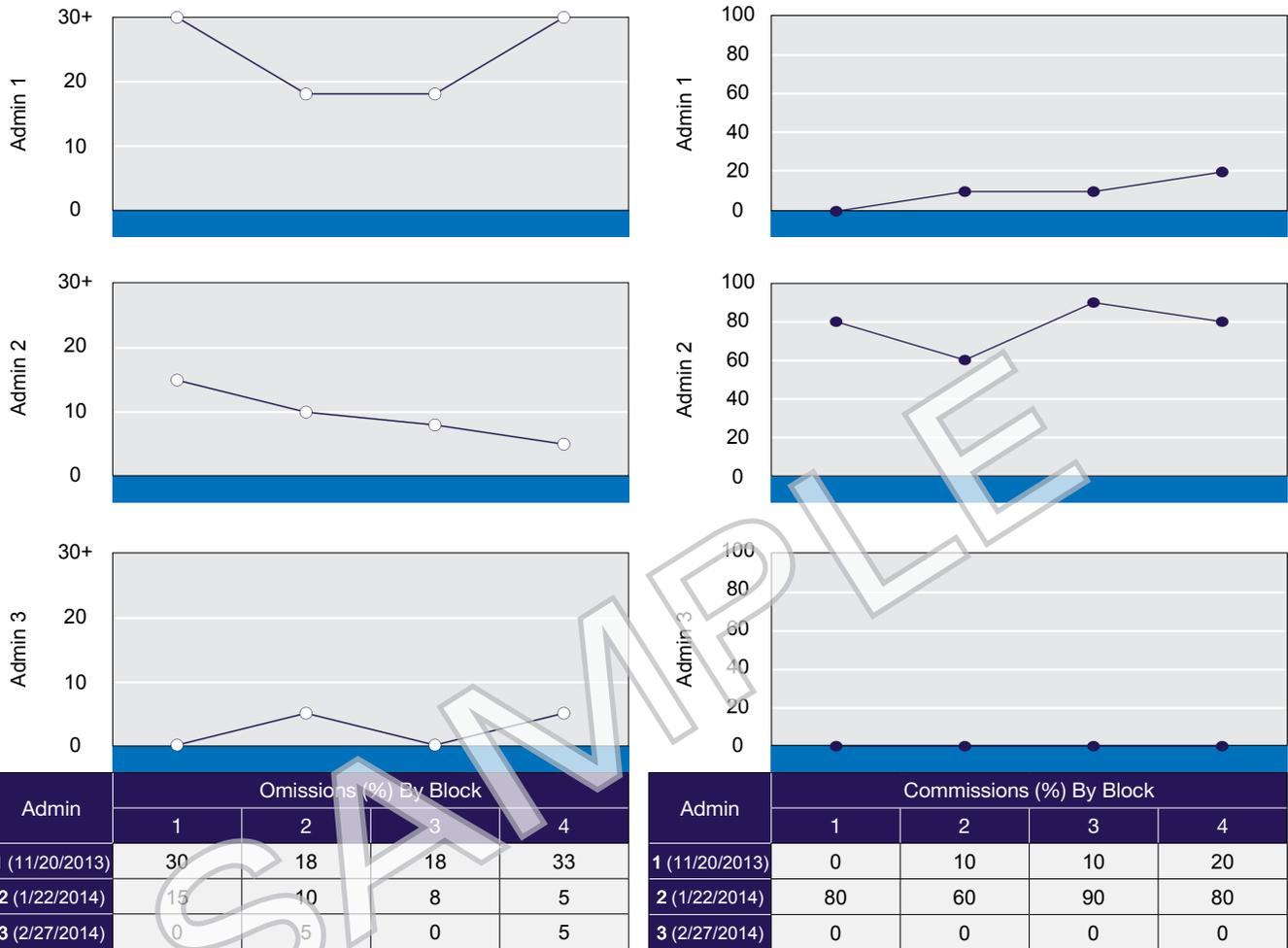
Hit Reaction Time by Block

HRT (SD)			
	Block 1	Block 2	Block 3	Block 4
Admin 1 (11/20/2013)	655 (419)	841 (526)	785 (497)	643 (442)
Admin 2 (1/22/2014)	1068 (542)	776 (372)	877 (426)	1038 (446)
Admin 3 (2/27/2014)	1021 (179)	909 (187)	1085 (273)	994 (242)

Note. ms = milliseconds; SD = Standard Deviation.

HRT Block Change

T-score	48	52	51
	Admin 1 (11/20/2013)	**Admin 2** (1/22/2014)	**Admin 3** (2/27/2014)

8 Conners CATA Report: Jessica Sample

MHS

Omissions (%) and Commissions (%) by Block

Admin	Omissions (%) By Block			
	1	2	3	4
1 (11/20/2013)	30	18	18	33
2 (1/22/2014)	15	10	8	5
3 (2/27/2014)	0	5	0	5

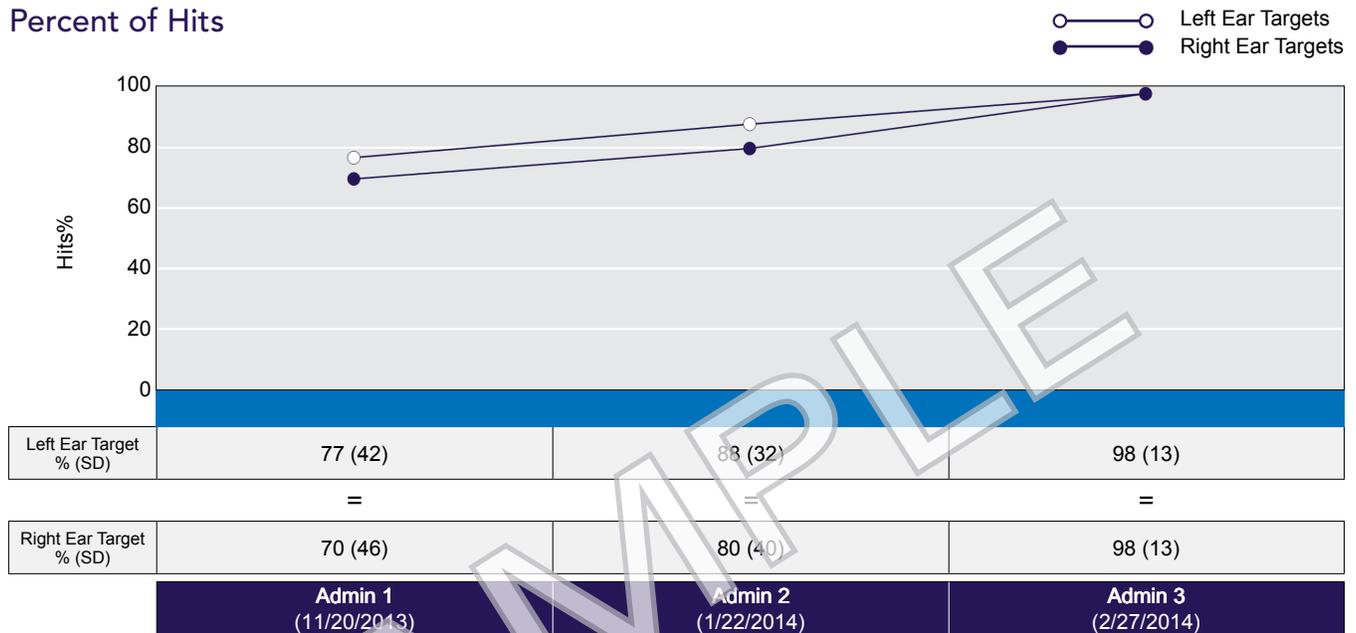| Admin	Commissions (%) By Block			
	1	2	3	4
1 (11/20/2013)	0	10	10	20
2 (1/22/2014)	80	60	90	80
3 (2/27/2014)	0	0	0	0

Note. No statistically significant differences were found in error rates between blocks.

HRT Block Change indicates the change in mean response speed across blocks. Higher T-scores indicate more slowing across blocks. The following T-scores were obtained: Admin 1 (T = 48; 90% CI = 43-53; 42nd percentile; Average), Admin 2 (T = 52; 90% CI = 47-57; 63rd percentile; Average), and Admin 3 (T = 51; 90% CI = 46-56; 58th percentile; Average). Scores did not statistically change across administrations.

Jessica's profile of scores did not indicate a problem with sustained attention during Admin 1, Admin 2, and Admin 3.
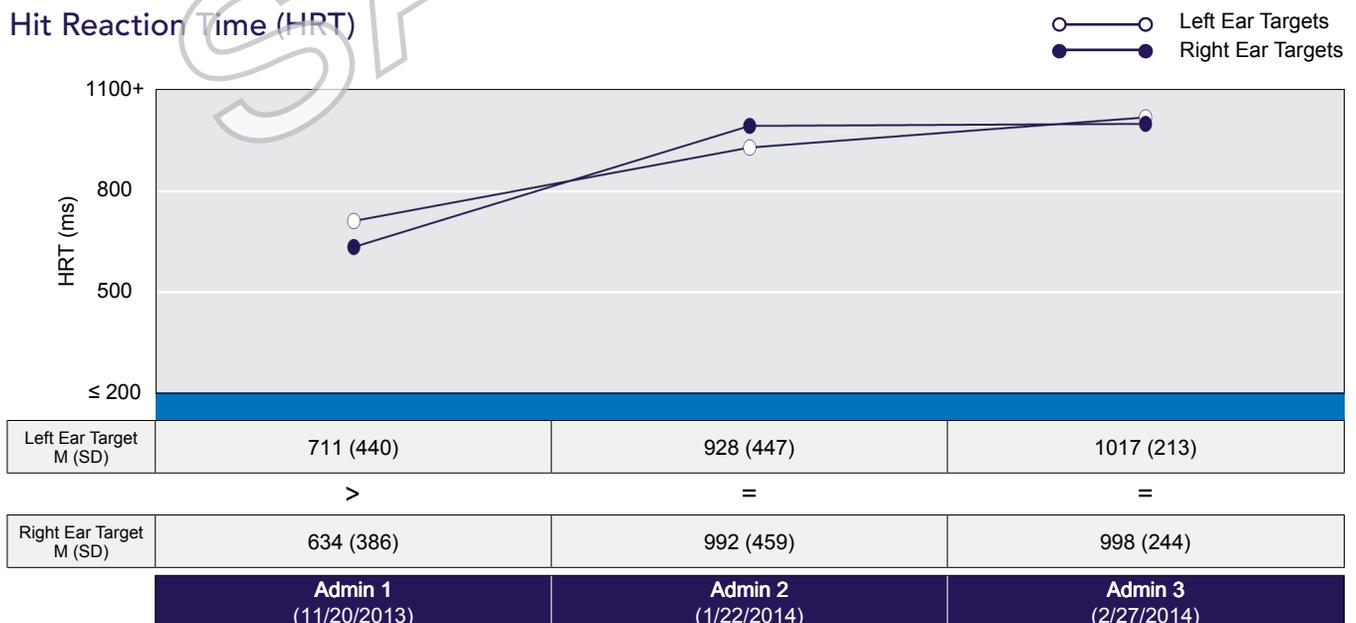
This section of the report provides descriptive information about changes in Jessica's auditory laterality (i.e., the respondent's preference for left or right ear targets) across administrations. Auditory laterality is presented in terms of Hits % (i.e., the rate of response to targets) and Hit Reaction Time (HRT). The ">" and "<" symbols indicate that there are statistically significant differences in Jessica's responses to left versus right ear targets. Differences that do not reach statistical significance are denoted by the "=" symbol.

Percent of Hits

○——○ Left Ear Targets
●——● Right Ear Targets

	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)
Left Ear Target % (SD)	77 (42)	88 (32)	98 (13)
	=	=	=
Right Ear Target % (SD)	70 (46)	80 (40)	98 (13)

Note. SD = Standard Deviation

Hit Reaction Time (HRT)

○——○ Left Ear Targets
●——● Right Ear Targets

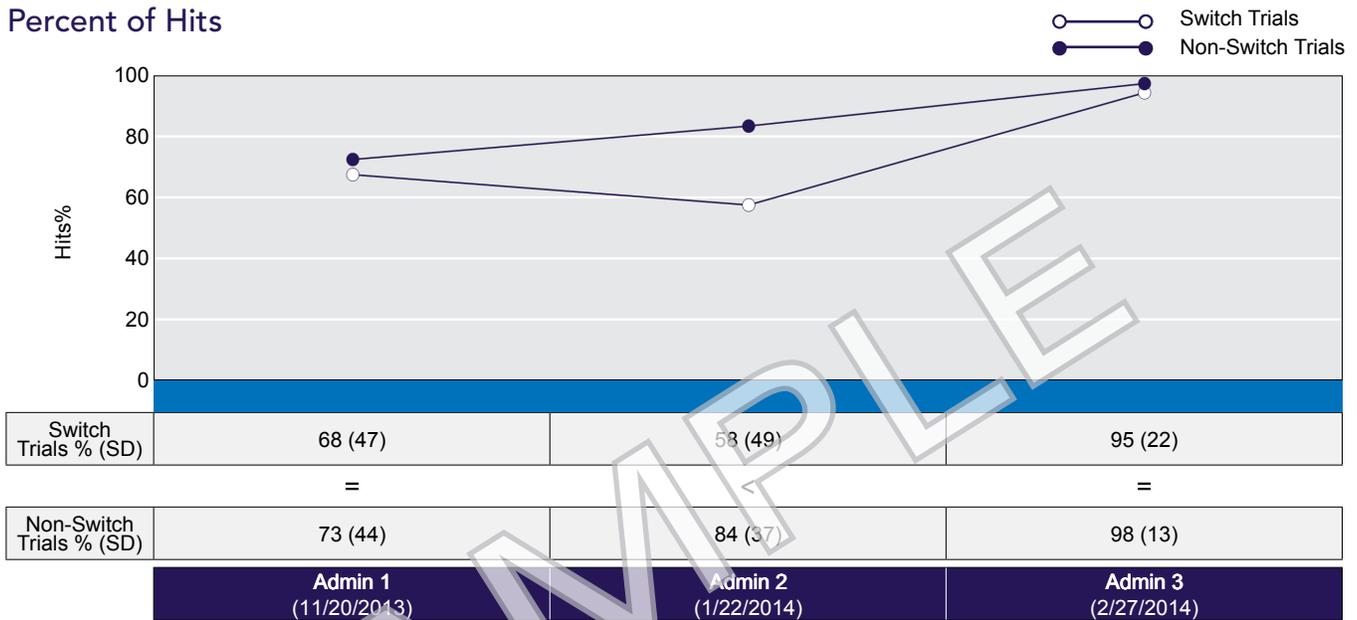|	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)
Left Ear Target M (SD)	711 (440)	928 (447)	1017 (213)
	>	=	=
Right Ear Target M (SD)	634 (386)	992 (459)	998 (244)

Note. M = Mean, SD = Standard Deviation

Jessica's hits% was approximately the same across administrations. Jessica's HRT was significantly different between left vs. right ear targets for Admin 1.
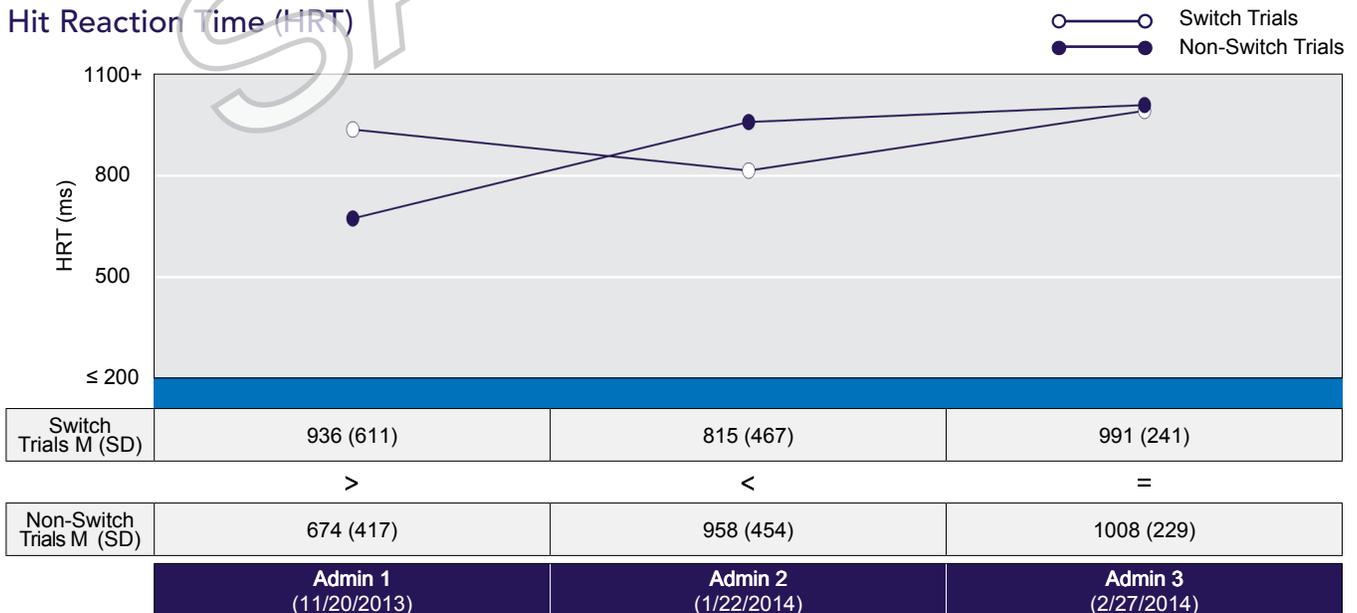
Auditory Mobility

There are two types of warned trials on the Conners CATA. On *switch* trials, the low-tone warning sound and the high-tone target sound are played in different ears, requiring the respondent to shift auditory attention from one side to the other. Sometimes, the switch is from left to right and, other times, the switch is from right to left. On *non-switch* trials, the two sounds are played in the same ear. This section of the report provides descriptive information about changes in Jessica's auditory mobility. Auditory mobility is presented in terms of Hits% (i.e., the rate of response to targets) and Hit Reaction Time (HRT). The ">" and "<" symbols indicate that there are statistically significant differences in Jessica's responses to different types of trials. Differences that do not reach statistical significance are denoted by the "=" symbol.

Percent of Hits

	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)
Switch Trials % (SD)	68 (47)	58 (49)	95 (22)
	=	<	=
Non-Switch Trials % (SD)	73 (44)	84 (37)	98 (13)

Note. SD = Standard Deviation

Hit Reaction Time (HRT)

	Admin 1 (11/20/2013)	Admin 2 (1/22/2014)	Admin 3 (2/27/2014)
Switch Trials M (SD)	936 (611)	815 (467)	991 (241)
	>	<	=
Non-Switch Trials M (SD)	674 (417)	958 (454)	1008 (229)

Note. M = Mean, SD = Standard Deviation

Jessica's hits% was significantly different on Switch and Non-Switch trials for Admin 2. Jessica's HRT was significantly different on Switch and Non-Switch trials for Admin 1 and Admin 2.

Ver 1.0 · Date Printed: 2/27/2014 · End of Report · Conners CATA Report: Jessica Sample

⊠ MHS

		Raw Scores		
Variable Type	**Measure**	**Admin 1** **(11/20/2013)**	**Admin 2** **(1/22/2014)**	**Admin 3** **(2/27/2014)**
Detectability	d'	-1.80	-0.02	-4.16
Error Type	Omissions	24%	9%	3%
	Commissions	10%	78%	0%
	Perseverative Commissions	3%	13%	0%
Reaction Time Statistics	Hit Reaction Time (HRT)	735.77	931.79	1003.38
	HRT Standard Deviation (HRT SD)	482.39 (0.596)	459.72 (0.455)	232.46 (0.231)
	HRT Block Change	-9.44 (-0.014)	0.93 (0.010)	9.48 (0.005)

Note. The values in parentheses in the Raw Score column are based on the natural logarithm of the Hit Reaction Times. These logged values were used in the computations of the T-scores. For d', HRT Block Change, and HRT ISI change, negative raw score values are possible. See the *Conners CATA Manual* for more information.

         Conners CATA Report: Jessica Sample

Response Style

C is a signal detection statistic that measures an individual's natural response style in tasks involving a speed-versus-accuracy trade-off. Based on his or her score on this variable, a respondent can be classified as having one of the following three response styles: a *conservative* style that emphasizes accuracy over speed; a *liberal* style that emphasizes speed over accuracy; or a *balanced* style that is biased neither to speed nor accuracy. Response style can affect scores such as Commissions and Hit Reaction Time (HRT), and should be taken into consideration during interpretation.

Detectability (*d′*)

d-prime (*d′*) is a measure of how well the respondent discriminates non-targets (i.e., the high tones on unwarned trials) from targets (i.e., the high tones on warned trials). This variable is also a signal detection statistic that measures the difference between the signal (targets) and noise (non-targets) distributions. In general, the greater the difference between the signal and noise distributions, the better the ability to distinguish non-targets and targets. On the Conners CATA, *(d′)* this variable is reverse-scored so that higher raw score and *T*-score values indicate worse performance (i.e., poorer discrimination).

Omissions (%)

Omissions are missed targets. High omission error rates indicate that the respondent was not responding to the target stimuli due to a specific reason (e.g., difficulty focusing). Omission errors are generally an indicator of inattentiveness.

Commissions (%)

Commissions are incorrect responses to non-targets. Depending on the respondent's HRT, high commission error rates may indicate either inattentiveness or impulsivity. If high commission error rates are coupled with slow reaction times, then the respondent was likely inattentive to the stimulus type being presented and thus responded to a high rate of non-targets. If high commission error rates are combined with fast reaction times, the respondent was likely rushing to respond and failed to control his or her impulses when responding to the non-targets. In the latter case, high commission error rates would reflect impulsivity rather than inattentiveness.

Perseverative Commissions (%)

Perseverative Commissions are recorded when a respondent incorrectly responds after the low tone and before the high tone on a warned trial. Perseverative Commissions may indicate impulsivity (if HRT is also fast) or anticipatory responding.

Hit Reaction Time (HRT)

Hit Reaction Time (HRT) is the mean response speed, measured in milliseconds, for all non-perseverative target responses made during the entire administration. An atypically slow HRT may indicate inattentiveness (especially when error rates are high), but may also be the result of a very conservative response style. Alternatively, a very fast HRT, when combined with high commission or perseverative commission error rates, may indicate impulsivity.

Hit Reaction Time Standard Deviation (HRT SD)

HRT SD measures the consistency of response speed to targets for the entire administration. A high HRT SD indicates greater inconsistency in response speed. Response speed inconsistency is sometimes indicative of inattentiveness, suggesting that the respondent was less engaged and processed stimuli less efficiently during some parts of the administration.

Hit Reaction Time Block Change (HRT Block Change)

HRT Block Change is the slope of change in HRT across the four blocks of the administration. A positive slope indicates decelerating reaction times as the administration progressed, while a negative slope indicates accelerating reaction times. If reaction times slow down, as indicated by a higher HRT Block Change score, the respondent's information processing efficiency declines, and a loss of sustained attention is indicated.

Omissions by Block

Omissions by Block (raw score only) is the rate of the respondent's missed targets in each of the four blocks. An increase in omission error rate in later blocks indicates a loss of sustained attention.

Commissions by Block

Commissions by Block (raw score only) is the rate of the respondent's incorrect responses to non-targets in each of the four blocks. An increase in commission error rate in later blocks indicates a loss of sustained attention.

Hit% and HRT by Left- or Right-Ear Targets

Hit% and HRT by Left- or Right-Ear Targets (raw scores only) assess auditory laterality (i.e., efficiency in processing left- or right-ear targets) by comparing the respondent's Hit% (percentage of correct responses to targets) and HRT for left-ear targets to those for right-ear targets. Faster HRT and a higher Hit% in a particular ear indicate preference for hearing targets using that ear.

Hit% and HRT on Switch vs. Non-Switch Trials

Hit% and HRT on Switch vs. Non-Switch trials (raw scores only) assess auditory mobility (i.e., ability to switch attention from one ear to the other) by comparing the respondent's Hit% and HRT on switch trials to those recorded on non-switch trials. Lower Hit% and slower HRT on switch trials may indicate issues with auditory mobility.