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CORRECTION

Correction to: Variation in Parasympathetic Dysregulation Moderates Short-Term Memory Problems in Childhood Attention-Deficit/Hyperactivity Disorder

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Correction to: J Abnorm Child Psychol (2015) 43:1573–1583
https://doi.org/10.1007/s10802-015-0054-3

The authors note two errors in this article. In the reference section, Musser et al. (2014) was mistakenly used whereas the following entry should have been used:

Musser, E. D., Galloway-Long, H. S., Frick, P. J., & Nigg, J. T. (2013). Emotion regulation and heterogeneity in attention-deficit/hyperactivity disorder. *Journal of the American Academy of Child & Adolescent Psychiatry, 52*(2), 163–171.

Therefore, Musser et al. (2014) is mistakenly cited in the discussion section (fifth paragraph) where Musser et al. (2013) would be the appropriate citation.

Additionally, in the Participants section, readers are mistakenly directed to see Musser et al. (2014) for further details on recruitment and diagnostic procedures, whereas Musser et al. (2011) is the correct citation here (and is included in the reference section of the original article).

The online version of the original article can be found at https://doi.org/10.1007/s10802-015-0054-3

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This erratum reports an error in Ward, A. R., Alarcón, G., Nigg, J. T., & Musser, E. D. (2015). Variation in parasympathetic dysregulation moderates short-term memory problems in childhood attention-deficit/hyperactivity disorder. *Journal of Abnormal Child Psychology*, 43(8), 1573–1583. Errors in the artifact-removal process in cardiac psychophysiology data were discovered in the original manuscript. This erratum reports updated means, standard deviations, and patterns of effects; determinations regarding significance and interpretations of results were unaffected. (The following abstract of the original article appeared in https://doi.org/10.1007/s10802-015-0054-3). Although attention deficit/hyperactivity disorder (ADHD) is associated with impairment in working memory and short-term memory, up to half of individual children with ADHD perform within a normative range. Heterogeneity in other ADHD-related mechanisms, which may compensate for or combine with cognitive weaknesses, is a likely explanation. One candidate is the robustness of parasympathetic regulation (as indexed by respiratory sinus arrhythmia; RSA). Theory and data suggest that a common neural network is likely tied to both heart-rate regulation and certain cognitive functions (including aspects of working and short-term memory). Cardiac derived indices of parasympathetic reactivity were collected during short-term memory (STM) storage and rehearsal tasks from 243 children (116 ADHD, 127 controls). ADHD was associated with lower STM performance, replicating previous work. In addition, RSA reactivity moderated the association between STM and ADHD – both as a category and a dimension – independent of comorbidity. Specifically, conditional effects revealed that high levels of withdrawal interacted with weakened STM but high levels of augmentation moderated a positive association predicting ADHD. Thus, variations in parasympathetic reactivity may help explain neuropsychological heterogeneity in ADHD.

Table 2 Dependent variables

Group				
	ADHD	Control	F	eta^2_p
Short-term memory				
#Correct Trials FWD	4.34 (1.74)	5.60 (1.86)	29.58**	0.109
#Correct Trials BKW	3.64 (1.95)	4.66 (2.10)	15.18**	0.059
Psychophysiology data				
Resting RSA	7.52 (1.16)	7.21 (1.17)	4.35*	0.018
Neutral Baseline RSA	7.08 (1.28)	6.67 (1.33)	5.85*	0.024
SSp Fwd RSA 30 sec[a]	7.28 (1.18)	6.84 (1.22)	8.1*	0.003
SSp Bkw RSA 30 sec[a]	7.17 (1.16)	6.82 (1.20)	5.24*	0.021
Change RSA SSp FWD[b]	0.20 (0.96)	0.16 (0.84)	0.08	0.001
Change RSA SSp BWK[b]	0.09 (0.99)	0.15 (0.80)	0.259	0.001

*$p < 0.05$, **$p < 0.01$. eta^2_p partial eta squared

[a] Mean RSA during first 30-s epoch

[b] Change form neutral baseline condition

Description of the Error and Updated Results

After publication, it was determined that there were errors in the identification/removal of artifacts in the cardiac psychophysiology data used in the original manuscript (i.e., the procedures described in the Methods were not consistently applied to all raw cardiac psychophysiology files). Corrected data are reported in corrected Tables 2 and 3, and corrected interaction effect sizes follow in the figures. Specific information about changes to parameter- and *p*-values, as well as effect sizes are available by request to the author.

A second error was noted during this review. Specifically, in the original manuscript it stated that respiratory sinus arrhythmia (RSA) values during the neutral baseline task *prior to* the Spatial Span tasks were used to calculate physiology change scores; however, it was the neutral baseline task *following* the Spatial Span tasks was used in this calculation. Statistical significance decisions and interpretation and conclusions were unaffected.

Table 3 Conditional effects of STM-R on ADHD outcome by value of the moderator

Outcome	Change RSA	b	SE	95% CI	Exp(b)
ADHD Diagnosis	-1SD	−0.43**	0.13	(−0.69, −0.17)	0.78
	Mean	−0.19*	0.09	(−0.36, −0.02)	0.12
	+1SD	0.05	0.13	(−0.21, 0.30)	1.01
Change in R^2 due to interaction = 0.03					
Overall T-score	-1SD	−1.88**	0.58	(−3.02, −0.74)	0.78
	Mean	−0.58	0.39	(−1.37, −0.21)	0.12
	+1SD	0.72	0.57	(−0.40, 1.83)	1.01
Change in R^2 due to interaction = 0.02					
Inattentive T-score	-1SD	−2.04**	0.63	(−3.28, −0.79)	0.78
	Mean	−0.63	0.44	(−1.49, 0.23)	0.12
	+1SD	0.78	0.62	(−0.44, 2.00)	1.01
Change in R^2 due to interaction = 0.02					
Hyperactive T-score	-1SD	−1.37*	0.53	(−2.43, −0.32)	0.78
	Mean	−0.43	0.37	(−1.16, 0.30)	0.12
	+1SD	0.51	0.52	(−0.52, 1.54)	1.01
Change in R^2 due to interaction = 0.01					

*$p < 0.05$, **$p < 0.01$

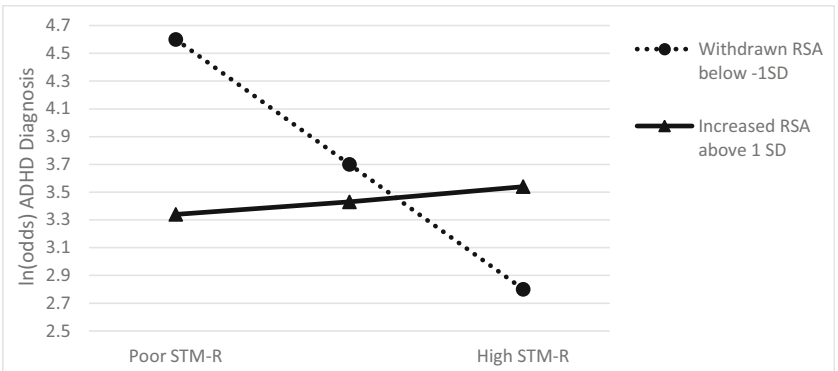

Fig. 1 Graph of Interaction of RSA reactivity and STM-R in predicting likelihood of ADHD diagnosis. *Note.* z = 2.52, b = 0.27, $p = 0.01$

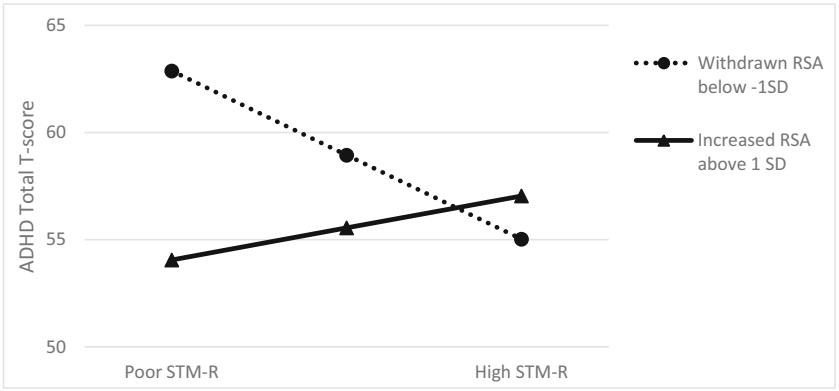

Fig. 2 Graph of Interaction of RSA reactivity and STM-R in predicting Overall ADHD T-score. *Note.* t(236) = 3.16, b = 1.45, $p = 0.002$; Visualized moderation effect was similar for both the inattentive and hyperactive/impulsive symptom domains as well