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# Author Correction: Fornix white matter glia damage causes hippocampal gray matter damage during age-dependent limbic decline

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Correction to: *Scientific Reports* <https://doi.org/10.1038/s41598-018-37658-5>, published online 31 January 2019

This Article contains errors in Tables 2 and 3, where the uncorrected p-values are given rather than the corrected Benjamini-Hochberg adjusted p-values. As a result the Table legends,

“Summary of the effects of age on gray and white matter microstructural indices. \*Controlled for intracranial volume, \*\*5% FDR corrected. ISOSF = isotropic signal fraction, MPF = macromolecular proton fraction, ODI = orientation dispersion index, PHC = parahippocampal cingulum.”

should read:

“Summary of the effects of age on gray and white matter microstructural indices. \*Controlled for intracranial volume, \*\*5% False Discovery Rate Benjamini-Hochberg adjusted p-values. ISOSF = isotropic signal fraction, MPF = macromolecular proton fraction, ODI = orientation dispersion index, PHC = parahippocampal cingulum.”

and

“Summary of the results of the hierarchical regression models testing for the effects of genetic and lifestyle risk variables on fornix and hippocampus mediator variables. 5% FDR corrected p-values are highlighted in bolds.”

should read:

“Summary of the results of the hierarchical regression models testing for the effects of genetic and lifestyle risk variables on fornix and hippocampus mediator variables.  $p_{BHadj}$ , 5% False Discovery Rate Benjamini-Hochberg adjusted p-values (significant p-values are highlighted in bold). BP = blood pressure, FH = family history, ICV = intracranial volume, ISOSF = isotropic signal fraction, MPF = macromolecular proton fraction, WHR = waist-hip-ratio.”

The correct Tables 2 and 3 appear below with their accompanying legends as Tables 1 and 2 respectively.

In addition, in Figure 3 the p-values for the following scatterplots are incorrect: Fornix ODI, LPHC  $R_2$ , RPHC  $R_1$ , LHC  $R_1$ , LHC ODI and LHC  $k_f$ . As a result, the Figure legend,

“Plots the correlations and Pearson coefficients (controlled for intracranial volume) between age and white and gray matter microstructural indices. Abbr.: ICSF = intracellular signal fraction, ISOSF = isotropic signal fraction,  $k_f$  = forward exchange rate, LHC = left hippocampus, LPHC = left parahippocampal cingulum, MPF = Macromolecular proton fraction, ODI = orientation dispersion index, R = longitudinal relaxation rate,

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MRI index		F <sub>(2,152)</sub> -value <sup>a</sup>	Benjamini-Hochberg corrected p-value <sup>**</sup>	Effect size $\eta p^2$
Fornix	MPF	11.9	0.0002	0.14
	$k_f$	10.0	0.0008	0.12
	R <sub>1</sub>	12.4	0.00035	0.14
	ISOSF	8.9	0.001	0.11
	ODI	5.0	0.03	0.06
Left PHC	R <sub>2</sub>	7.5	0.005	0.09
Right PHC	R <sub>1</sub>	4.7	0.03	0.06
Left hippocampus	$k_f$	6.7	0.008	0.08
	R <sub>1</sub>	5.0	0.025	0.06
	ISOSF	12.2	0.0002	0.14
	ODI	9.8	0.0007	0.12
Right hippocampus	ISOSF	7.5	0.004	0.09

**Table 1.** Summary of the effects of age on gray and white matter microstructural indices. <sup>a</sup>Controlled for intracranial volume, <sup>\*\*</sup>5% False Discovery Rate Benjamini-Hochberg adjusted p-values. ISOSF = isotropic signal fraction, MPF = macromolecular proton fraction, ODI = orientation dispersion index, PHC = parahippocampal cingulum.

Outcome variables	Adjusted R <sup>2</sup>	Predictors in final regression model
Fornix MPF	0.24 (p < 0.001)	Age (p <sub>BHadj</sub> < 0.001) WHR (p <sub>BHadj</sub> = 0.045)
Fornix R <sub>1</sub>	0.28 (p < 0.001)	Age (p <sub>BHadj</sub> < 0.001) ICV (p <sub>BHadj</sub> = 0.026) Alcohol (p <sub>BHadj</sub> = 0.03) WHR (p <sub>BHadj</sub> = 0.04)
Fornix $k_f$	0.23 (p < 0.001)	Age (p <sub>BHadj</sub> < 0.001) WHR (p <sub>BHadj</sub> = 0.07)
Fornix ISOSF	0.32 (p < 0.001)	Age (p <sub>BHadj</sub> < 0.001) ICV (p <sub>BHadj</sub> = 0.05) Sex (p <sub>BHadj</sub> = 0.004)
Right hippocampal ISOSF	0.36 (p < 0.001)	Age (p <sub>BHadj</sub> < 0.001) ICV (p <sub>BHadj</sub> = 0.026) Sex (p <sub>BHadj</sub> = 0.007) Diastolic BP (p <sub>BHadj</sub> = 0.07) FH (p <sub>BHadj</sub> = 0.07)

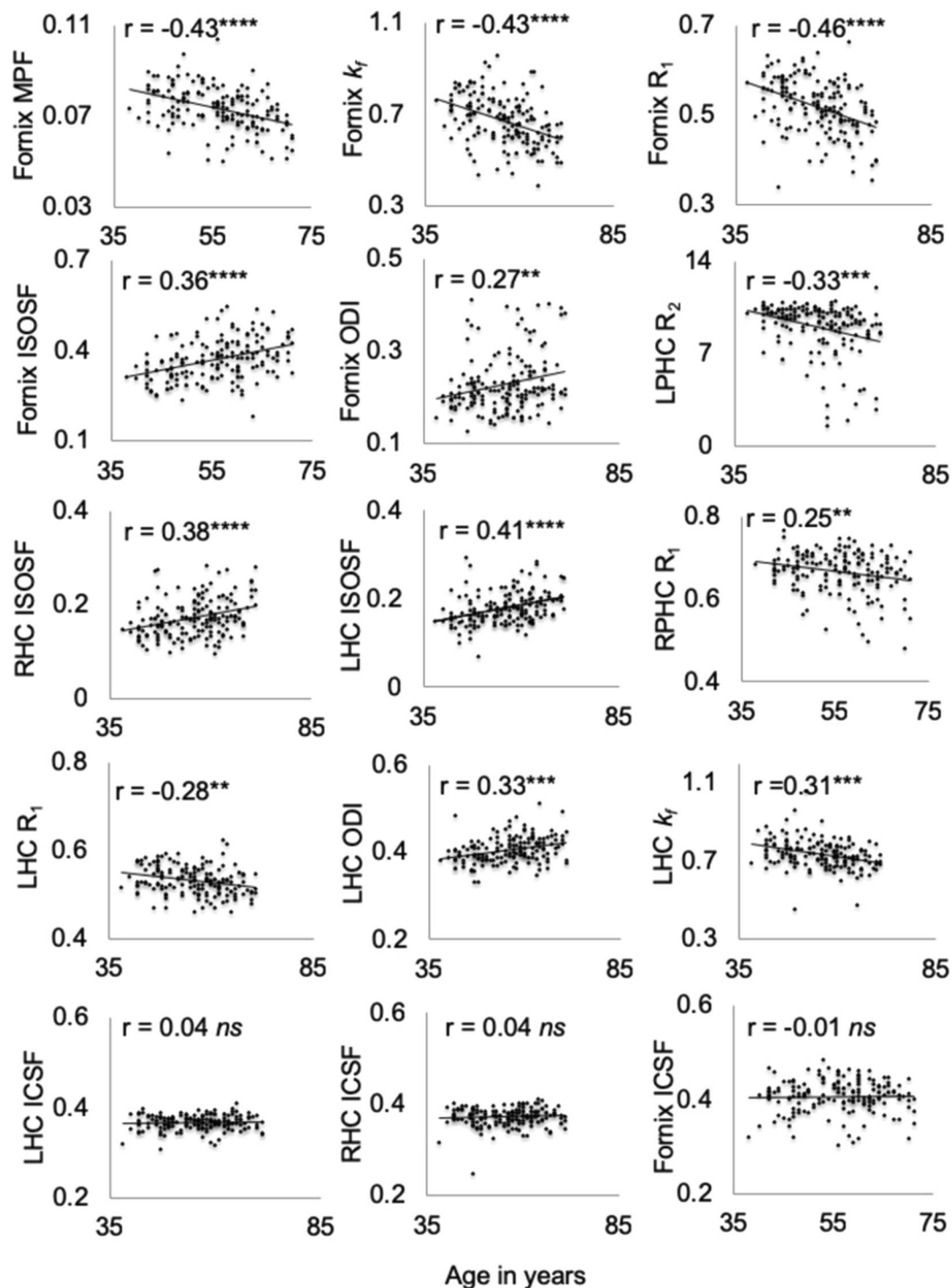
**Table 2.** Summary of the results of the hierarchical regression models testing for the effects of genetic and lifestyle risk variables on fornix and hippocampus mediator variables. p<sub>BHadj</sub>: 5% False Discovery Rate Benjamini-Hochberg adjusted p-values (significant p-values are highlighted in bold). BP = blood pressure, FH = family history, ICV = intracranial volume, ISOSF = isotropic signal fraction, MPF = macromolecular proton fraction, WHR = waist-hip-ratio.

RHC = right hippocampus, RPHC = right parahippocampal cingulum \*\*\*\*p < 0.0001, \*\*\*p < 0.001, \*\*p < 0.01, \*p < 0.05, 5% False Discovery Rate”

should read:

“Scatterplots of the correlations and Pearson coefficients (controlled for intracranial volume) between age and white and gray matter microstructural indices. Abbr.: ICSF = intracellular signal fraction, ISOSF = isotropic signal fraction,  $k_f$  = forward exchange rate, LHC = left hippocampus, LPHC = left parahippocampal cingulum, MPF = Macromolecular proton fraction, ODI = orientation dispersion index, R = longitudinal relaxation rate, RHC = right hippocampus, RPHC = right parahippocampal cingulum \*\*\*\*p < 0.0001, \*\*\*p < 0.001, \*\*p < 0.01, \*p < 0.05 (5% False Discovery Rate Benjamini-Hochberg adjusted p-values).”

The correct Figure 3 and its accompanying legend appears below as Figure 1.



**Figure 1.** Scatterplots of the correlations and Pearson coefficients (controlled for intracranial volume) between age and white and gray matter microstructural indices. Abbr.: ICSF = intracellular signal fraction, ISOSF = isotropic signal fraction,  $k_f$  = forward exchange rate, LHC = left hippocampus, LPHC = left parahippocampal cingulum, MPF = Macromolecular proton fraction, ODI = orientation dispersion index, R = longitudinal relaxation rate, RHC = right hippocampus, RPHC = right parahippocampal cingulum \*\*\*\* $p < 0.0001$ , \*\*\* $p < 0.001$ , \*\* $p < 0.01$  (5% False Discovery Rate Benjamini-Hochberg adjusted p-values).



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