

Outcomes	Age		Sex <sup>a</sup>		Hb <sup>a</sup>		HbF <sup>a</sup>		SCI <sup>a</sup>	
	Est (SE)	P	Est (SE)	P	Est (SE)	P	Est (SE)	P	Est (SE)	P
GM-CBF	0.77 (0.52)	0.15	8.6(3)	<b>0.011*</b>	-2.1 (0.88)	<b>0.029</b>	-0.17(0.11)	0.16	-1.9(3.4)	0.58
WM-CBF	0.43(0.27)	0.14	3.8(1.7)	0.04	-0.41(0.68)	0.56	-0.032(0.095)	0.74	-2.2(1.8)	0.23
BOLD	-0.071(0.056)	0.24	-0.62(0.33)	0.074	0.077(0.12)	0.56	0.013(0.018)	0.52	-0.6(0.34)	0.094
TCD velocity	-4.8(1.4)	<b>0.005*</b>	9(11)	0.41	-5.6(2)	<b>0.015</b>	-0.52(0.27)	0.082	-20(8.6)	<b>0.038</b>
Neurocognitive Evaluation										
Full Scale IQ	0.33(0.8)	0.68	0.83(6.4)	0.9	1.5(0.81)	0.085	0.24(0.1)	<b>0.045</b>	2.2(4.4)	0.63
Verbal Comprehension	-1.1(0.65)	0.12	0.32(4.4)	0.94	1.4(1.1)	0.21	0.3(0.13)	<b>0.042</b>	1.6(4)	0.7
Perceptual Reasoning	-0.73(0.94)	0.45	6.6(6.3)	0.32	1.5(1.4)	0.31	0.054(0.19)	0.79	-0.044(5.8)	0.99
Working Memory	0.43(0.96)	0.66	4(6.6)	0.55	3.6(1.3)	0.02	0.31(0.19)	0.13	10(5.6)	0.1
Processing Speed	0.5(0.92)	0.59	-3.3(6.5)	0.62	1.6(1.2)	0.22	0.17(0.15)	0.27	8.6(5.2)	0.12
WJ Letter Word ID	-95(67)	0.18	-360(600)	0.55	69(62)	0.29	12(9.1)	0.23	-61(350)	0.86
WJ Reading Fluency	0.14(0.97)	0.89	-4.3(8.8)	0.63	-0.25(0.91)	0.79	-0.043(0.13)	0.75	-7.5(4.6)	0.12
WJ Calculation	-1.9(1)	0.085	5.8(6.7)	0.41	3.4(1.7)	0.069	0.52(0.23)	<b>0.044</b>	11(5.9)	0.096
WJ Math Fluency	-0.021(0.029)	0.48	0.053(0.2)	0.79	0.043(0.048)	0.39	0.01(0.0064)	0.15	0.3(0.17)	0.1
WJ Passage Comprehension	78(80)	0.35	-290(600)	0.63	100(98)	0.31	33(12)	<b>0.016</b>	-160(460)	0.74
WJ Applied Problems	-0.48(0.8)	0.56	5.2(5.8)	0.38	0.98(0.96)	0.32	0.15(0.13)	0.29	3.4(4.6)	0.48

TABLE 2 Associations between age, sex, Hb and HbF and GM/WM CBF, BOLD, TCD, and neurocognitive variables using Linear

### Mixed Effects Models

Note: P<0.05 indicates significance (two-sided). \*P-values remained significant after adjustment for false discovery rate ( $p^{\text{FDR}} < 0.05$ ).

<sup>a</sup>Adjusted for age in the model. Est (SE)=Beta coefficient estimate and standard error (calculated from linear mixed effect models).

Abbreviations: Hb=hemoglobin, HbF=hemoglobin F, GM-CBF=gray matter cerebral blood flow, WM-CBF=white matter cerebral blood flow, BOLD=blood oxygen level dependent signal, TCD=transcranial Doppler ultrasound, SCI=silent cerebral infarct, WJ=Woodcock-Johnson