

## **Supplementary Tables**

**Table S1:** The MNI coordinates and anatomical labels of each NIRS channel

**Table S2:** Correlation table showing the relationship between age, reaction time measures and fNIRS functional connectivity measures

**Table S3:** Correlation tables between WCST reaction time and PFC FC parameters (subgroup analyses)

**Table S1:** The MNI coordinates and anatomical labels of each NIRS channel

Channel number	x	y	z	Anatomical labels (listed by descending % of overlap)
CH01	-75.1	-38.7	114.7	SupraMarginal_R
CH02	-71.15	-62.05	101.1	Postcentral_R, Precentral_R
CH03	-60.1	-83.5	90.9	Frontal_Inf_Tri_R, Frontal_Inf_Oper_R, Frontal_Mid_R
CH04	-41.55	-100.75	84.65	Frontal_Mid_R
CH05	-17.55	-109.8	81.3	Frontal_Sup_R, Frontal_Mid_R, Frontal_Sup_Medial_R
CH06	10.4	-109.95	80.45	Frontal_Sup_L, Frontal_Sup_Medial_L
CH07	40.7	-98.85	83.3	Frontal_Mid_L
CH08	62.35	-80.2	89.3	Frontal_Inf_Tri_L, Frontal_Inf_Oper_L
CH09	75.4	-58.7	96.4	Postcentral_L, Precentral_L
CH10	81.5	-34.45	105.8	SupraMarginal_L
CH11	-78.75	-22.3	108.85	SupraMarginal_R
CH12	-79.5	-46.9	92.55	Postcentral_R, SupraMarginal_R
CH13	-71.5	-70.45	80.6	Precentral_R, Frontal_Inf_Oper_R, Frontal_Inf_Tri_R
CH14	-58.35	-92.5	71.4	Frontal_Inf_Tri_R, Frontal_Mid_R
CH15	-33.55	-107.9	65.95	Frontal_Mid_R, Frontal_Sup_R
CH16	-4.95	-112.05	63.95	Frontal_Sup_Medial_R, Frontal_Sup_Medial_L
CH17	27.2	-107.85	64.95	Frontal_Sup_L, Frontal_Mid_L
CH18	55.2	-90	69.25	Frontal_Inf_Tri_L, Frontal_Mid_L
CH19	70.1	-67.7	76.05	Frontal_Inf_Oper_L, Frontal_Inf_Tri_L
CH20	81.3	-43.2	84.65	Postcentral_L
CH21	82.9	-18.75	97.3	Temporal_Sup_L, SupraMarginal_L
CH22	-83.15	-30.5	86.7	Temporal_Sup_R, SupraMarginal_R
CH23	-79.85	-55.3	72.05	Postcentral_R, Rolandic_Oper_R, Precentral_R
CH24	-69.75	-79.45	61.1	Frontal_Inf_Tri_R
CH25	-50.35	-99.65	52.7	Frontal_Mid_R
CH26	-20.95	-110.15	48.6	Frontal_Sup_R, Frontal_Sup_Medial_R
CH27	11.85	-109.95	48.45	Frontal_Sup_L, Frontal_Sup_Medial_L
CH28	41.7	-99	50.9	Frontal_Mid_L
CH29	62.95	-77.5	56	Frontal_Inf_Tri_L
CH30	76	-52.2	64.3	Rolandic_Oper_L, Frontal_Inf_Oper_L, Postcentral_L
CH31	82.7	-27.5	76.15	Temporal_Mid_L, Temporal_Sup_L, SupraMarginal_L
CH32	-82.9	-13.6	79.15	Temporal_Sup_R, Temporal_Mid_R
CH33	-81.95	-38.5	63.85	Temporal_Sup_R
CH34	-74.35	-64.2	51.75	Frontal_Inf_Oper_R, Frontal_Inf_Tri_R, Rolandic_Oper_R
CH35	-62.05	-87.9	41.05	Frontal_Inf_Tri_R, Frontal_Inf_Orb_R
CH36	-37.55	-105.05	33.75	Frontal_Mid_Orb_R, Frontal_Mid_R, Frontal_Sup_Orb_R
CH37	-5.55	-108.55	31.6	Frontal_Mid_Orb_R, Frontal_Mid_Orb_L, Frontal_Sup_Medial_R
CH38	27.25	-105.35	32.95	Frontal_Mid_Orb_L, Frontal_Sup_L, Frontal_Sup_Orb_L
CH39	54.15	-86.9	36.95	Frontal_Inf_Orb_L, Frontal_Inf_Tri_L, Frontal_Mid_Orb_L
CH40	68.7	-60.65	44.85	Temporal_Pole_Sup_L, Frontal_Inf_Tri_L
CH41	79.55	-37	54.2	Temporal_Mid_L
CH42	84.4	-10.9	66.75	Temporal_Mid_L

CH43	-81.7	-21.6	56.3	Temporal_Mid_R, Temporal_Sup_R
CH44	-76.45	-47.4	43.55	Temporal_Sup_R, Temporal_Mid_R
CH45	-66.65	-72.65	31.7	Frontal_Inf_Orb_R, Frontal_Inf_Tri_R
CH46	-49.25	-93.3	22.1	Frontal_Mid_Orb_R, Frontal_Inf_Orb_R
CH47	-22.15	-103.45	16.75	Frontal_Sup_Orb_R, Frontal_Mid_Orb_R
CH48	9.85	-103.95	16.1	Frontal_Sup_Orb_L, Frontal_Mid_Orb_L
CH49	39.7	-93.25	19	Frontal_Mid_Orb_L, Frontal_Inf_Orb_L
CH50	59.9	-70.05	25.8	Frontal_Inf_Orb_L
CH51	72.25	-45.45	34.75	Temporal_Mid_L
CH52	81.25	-20.4	44.8	Temporal_Mid_L, Temporal_Inf_L

**Table S2:** Correlation table showing the relationship between age, reaction time measures and fNIRS functional connectivity measures

Group/ Parameters	RT_acquisition	RT_application	R_IPFC_acquisition	R_IPFC_application	L_IPFC_application
Whole group	-0.053	0.046	0.181	0.159	0.171
TD subgroup	-0.173	-0.086	0.189	0.066	-0.005
ASD subgroup	0.239	0.415	0.139	0.194	0.095

Note: N = 51 (listwise); Spearman's rho correlation analyses were performed.

**Table S3:** Correlation tables between WCST reaction time and PFC FC parameters (subgroup analyses)

a) TD subgroup

	<b>R_IPFC_acquisition</b>	<b>R_IPFC_application</b>	<b>L_IPFC_application</b>
<b>RT_acquisition</b>	-0.397	-0.456	-0.443
<b>RT_application</b>	-0.406	-0.529 **	-0.461

Note: N = 24 (listwise); Spearman's rho correlation analyses were performed.

b) ASD subgroup

	<b>R_IPFC_acquisition</b>	<b>R_IPFC_application</b>	<b>L_IPFC_application</b>
<b>RT_acquisition</b>	0.022	0.062	0.155
<b>RT_application</b>	0.041	-0.018	-0.119

Note: N = 27 (listwise); Spearman's rho correlation analyses were performed.