

Supplemental Table 1 – Overview of the Characteristics of Missingness within each of the datasets

Dataset	Missing CBCL (Ext/Int/Attn)	Missing IQ	Missing Imaging Data	Type of Missing	Relation to demographics
dpn_data1	0	0	0	N/A	N/A
dpn_data2	0	0	0	N/A	N/A
dpn_data3	0	0	0	N/A	N/A
leer_data1	11,713/13,711/12,450	7,004	10,712	MNAR	p=0.64
leer_data2	11,749/13,711/12,450	7,004	10,748	MNAR	p=0.52
leer_data3	11,763/13,801/12,494	7,028	10,723	MNAR	p=0.85
OSA_data1	13,300	13,300	13,300	MNAR	p=0.58
OSA_data2	13,300	13,300	13,300	MAR	p=0.58 *
OSA_data3	13,300	13,300	13,300	MAR	p=0.58 *
paint_data1	0	0	6,953	MCAR	N/A
paint_data2	0	0	0	N/A	N/A
paint_data3	500	0	2,000	MCAR	N/A
site4802_data1	700	700	700	MCAR	N/A
site4802_data2	0	0	0	N/A	N/A
site4802_data3	0	0	0	N/A	N/A

* Missingness was significantly related to higher CBCL scores ($\beta=-0.032$, $t=-17.8$, $p<0.0001$)

Supplemental Table 2 – Overview of the number of Dropouts within each Dataset with Missing Values

Dataset	Dropout Wave 5		Dropout Wave 6		Missing Wave 7	
	<i>CBCL</i>	<i>Imaging</i>	<i>CBCL</i>	<i>Imaging</i>	<i>CBCL</i>	<i>Imaging</i>
leer_data1	52	31	219	195	1459	1375
leer_data2	45	44	240	178	1375	1321
leer_data3	49	27	225	203	1426	1311
OSA_data1	49	49	308	308	1553	1553
OSA_data2	49	49	308	308	1553	1553
OSA_data3	49	49	308	308	1553	1553
paint_data1	0	93	250	895	0	895
paint_data3	0	0	250	1000	0	0
site4802_data1	0	0	1	1	91	109

Supplemental Table 3 – Main Effects of Sex with Neuroimaging Variables

Main effect of sex with gray matter volume

Dataset	coefficient	Confidence Interval (Lower)	Confidence Interval (Upper)	p value
dpn_data1	-56351.91	-58308.67	-54395.14	0.00E+00
dpn_data2	-53635.05	-55588.94	-51681.15	0.00E+00
dpn_data3	-53960.72	-55909.42	-52012.02	0.00E+00
leer_data1	-13368.24	-14261.89	-12474.59	5.85E-189
leer_data2	-12817.02	-13711.71	-11922.33	1.83E-173
leer_data3	-13582.61	-14479.48	-12685.74	1.29E-193
OSA_data1	14866.81	11879.24	17854.38	1.79E-22
OSA_data2	2886.69	-121.73	5895.12	6.00E-02
OSA_data3	14407.80	11393.79	17421.81	7.31E-21
paint_data1	-59902.48	-62638.86	-57166.10	0.00E+00
paint_data2	-107267.93	-109767.37	-104768.49	0.00E+00
paint_data3	-57531.87	-60233.30	-54830.44	0.00E+00
site4802_data1	-46975.37	-49992.01	-43958.74	1.38E-204
site4802_data2	-45017.31	-47946.41	-42088.21	2.44E-199
site4802_data3	-58140.42	-66044.25	-50236.60	4.02E-47

Main effect of sex with white matter volume

Dataset	coefficient	Confidence Interval (Lower)	Confidence Interval (Upper)	p value
dpn_data1	dpn_data1	-42207.35	-43848.67	-40566.02
dpn_data2	dpn_data2	-39909.99	-41551.68	-38268.30
dpn_data3	dpn_data3	-41022.69	-42661.97	-39383.41
leer_data1	leer_data1	-50635.92	-51922.20	-49349.65
leer_data2	leer_data2	-52114.50	-53407.48	-50821.52
leer_data3	leer_data3	-50899.08	-52192.35	-49605.81
OSA_data1	OSA_data1	7166.22	6079.68	8252.77
OSA_data2	OSA_data2	728.77	-562.77	2020.31
OSA_data3	OSA_data3	1888.02	603.77	3172.26
paint_data1	paint_data1	783.40	-2206.08	3772.88
paint_data2	paint_data2	-96088.52	-98097.28	-94079.76
paint_data3	paint_data3	-50466.84	-52690.81	-48242.87
site4802_data1	site4802_data1	-41876.35	-44512.73	-39239.96
site4802_data2	site4802_data2	-40613.21	-43183.00	-38043.41
site4802_data3	site4802_data3	-43483.56	-52479.97	-34487.15

Main effect of sex with hippocampal volume

Dataset	coefficient	Confidence Interval (Lower)	Confidence Interval (Upper)	p value
dpn_data1	-531.01	-559.69	-502.34	1.74E-288
dpn_data2	-530.11	-558.68	-501.54	1.43E-289
dpn_data3	-520.03	-548.60	-491.46	1.09E-278
leer_data1	-54.28	-63.12	-45.43	2.48E-33
leer_data2	-60.79	-69.68	-51.91	5.45E-41
leer_data3	-59.59	-68.47	-50.71	1.66E-39
OSA_data1	-57.08	-72.88	-41.28	1.45E-12
OSA_data2	-68.96	-88.58	-49.34	5.65E-12
OSA_data3	-103.93	-123.04	-84.82	1.60E-26
paint_data1	-670.98	-724.94	-617.01	3.57E-131
paint_data2	-1212.78	-1263.79	-1161.77	0.00E+00
paint_data3	-628.85	-681.83	-575.86	1.11E-119
site4802_data1	-469.84	-513.74	-425.94	1.06E-97
site4802_data2	-413.85	-456.74	-370.97	8.69E-80
site4802_data3	-419.34	-483.93	-354.75	4.32E-37

Main effect of sex with Amygdala volume

Dataset	coefficient	Confidence Interval (Lower)	Confidence Interval (Upper)	p value
dpn_data1	-292.70	-307.93	-277.48	0.00E+00
dpn_data2	-300.92	-316.07	-285.78	0.00E+00
dpn_data3	-304.31	-319.43	-289.18	0.00E+00
leer_data1	-168.50	-175.75	-161.26	0.00E+00
leer_data2	-171.74	-178.91	-164.57	0.00E+00
leer_data3	-165.72	-172.91	-158.52	0.00E+00
OSA_data1	-24.34	-35.87	-12.81	3.51E-05
OSA_data2	-32.18	-44.80	-19.56	5.76E-07
OSA_data3	-0.05	-11.84	11.73	9.93E-01
paint_data1	-270.64	-296.17	-245.11	6.99E-96
paint_data2	-609.14	-632.28	-586.00	0.00E+00
paint_data3	-277.26	-302.18	-252.35	1.78E-105
site4802_data1	-254.70	-278.31	-231.10	2.99E-99
site4802_data2	-221.81	-245.23	-198.39	6.26E-77
site4802_data3	-227.48	-281.65	-173.32	1.84E-16

Main effect of sex with frontal lobe cortical thickness

Dataset	coefficient	Confidence Interval (Lower)	Confidence Interval (Upper)	p value
dpn_data1	dpn_data1	-0.002	-0.005	0.001
dpn_data2	dpn_data2	0.001	-0.002	0.004
dpn_data3	dpn_data3	-0.002	-0.005	0.002
leer_data1	leer_data1	0.058	0.056	0.060
leer_data2	leer_data2	0.059	0.057	0.061
leer_data3	leer_data3	0.058	0.056	0.060
OSA_data1	OSA_data1	-0.015	-0.021	-0.009
OSA_data2	OSA_data2	-0.019	-0.025	-0.012
OSA_data3	OSA_data3	-0.019	-0.025	-0.012
paint_data1	paint_data1	0.002	-0.008	0.012
paint_data2	paint_data2	0.026	0.015	0.037
paint_data3	paint_data3	0.000	-0.009	0.010
site4802_data1	site4802_data1	0.048	0.042	0.054
site4802_data2	site4802_data2	0.050	0.045	0.055
site4802_data3	site4802_data3	0.048	0.034	0.061

Main effect of sex with intracranial volume

Dataset	coefficient	Confidence Interval (Lower)	Confidence Interval (Upper)	p value
dpn_data1	-125534.15	-130023.15	-121045.14	0.00E+00
dpn_data2	-123792.44	-128284.06	-119300.83	0.00E+00
dpn_data3	-127016.60	-131492.00	-122541.20	0.00E+00
leer_data1	-74689.20	-77195.99	-72182.40	0.00E+00
leer_data2	-78660.83	-81157.11	-76164.55	0.00E+00
leer_data3	-75083.74	-77615.01	-72552.47	0.00E+00
OSA_data1	-146084.45	-149030.83	-143138.07	0.00E+00
OSA_data2	-147234.18	-152312.08	-142156.29	0.00E+00
OSA_data3	-100281.56	-106464.35	-94098.76	9.03E-222
paint_data1	-131642.62	-136681.22	-126604.02	0.00E+00
paint_data2	-243764.01	-248176.13	-239351.90	0.00E+00
paint_data3	-129127.98	-134123.45	-124132.51	0.00E+00
site4802_data1	-84697.41	-92929.08	-76465.74	1.93E-90
site4802_data2	-77864.96	-85935.82	-69794.10	9.60E-80
site4802_data3	-78518.69	-96457.41	-60579.96	9.58E-18

Supplemental Table 4 – Interaction Effects of Sex with Neuroimaging Variables

Age by sex interaction with gray matter volume

Dataset	coefficient	Confidence Interval (Lower)	Confidence Interval (Upper)	p value
dpn_data1	41.33	37.12	45.55	2.43E-82
dpn_data2	33.01	28.83	37.18	3.74E-54
dpn_data3	32.91	28.73	37.10	1.22E-53
leer_data1	-102.07	-106.83	-97.31	0.00E+00
leer_data2	-103.25	-108.02	-98.49	0.00E+00
leer_data3	-101.94	-106.71	-97.17	0.00E+00
OSA_data1	-97.40	-115.09	-79.70	3.96E-27
OSA_data2	-22.79	-40.58	-5.00	1.21E-02
OSA_data3	-90.62	-108.44	-72.79	2.19E-23
paint_data1	11.46	2.07	20.85	1.67E-02
paint_data2	1.31	-7.68	10.29	7.76E-01
paint_data3	2.95	-6.21	12.11	5.28E-01
site4802_data1	-17.46	-34.68	-0.25	4.67E-02
site4802_data2	-29.62	-46.42	-12.83	5.46E-04
site4802_data3	135.00	120.45	149.55	6.32E-74

Age by sex interaction with white matter volume

Dataset	coefficient	Confidence Interval (Lower)	Confidence Interval (Upper)	p value
dpn_data1	-43.23	-46.70	-39.77	2.79E-132
dpn_data2	-47.87	-51.34	-44.40	4.16E-161
dpn_data3	-47.34	-50.83	-43.85	1.26E-155
leer_data1	-8.67	-14.37	-2.97	2.86E-03
leer_data2	-1.47	-7.22	4.28	6.16E-01
leer_data3	-6.05	-11.80	-0.31	3.89E-02
OSA_data1	-49.02	-55.46	-42.59	2.12E-50
OSA_data2	-10.01	-17.65	-2.38	1.01E-02
OSA_data3	-15.21	-22.80	-7.61	8.67E-05
paint_data1	5.76	0.87	10.64	2.08E-02
paint_data2	3.46	-3.41	10.34	3.23E-01
paint_data3	2.09	-4.98	9.16	5.62E-01
site4802_data1	7.27	-7.78	22.32	3.44E-01
site4802_data2	-0.22	-14.95	14.52	9.77E-01
site4802_data3	8.31	-9.07	25.69	3.49E-01

Age by sex interaction with hippocampal volume

Dataset	coefficient	Confidence Interval (Lower)	Confidence Interval (Upper)	p value
dpn_data1	-0.04	-0.13	0.05	3.78E-01
dpn_data2	-0.15	-0.24	-0.06	8.46E-04
dpn_data3	-0.23	-0.32	-0.14	5.11E-07
leer_data1	-0.77	-0.81	-0.72	2.60E-216
leer_data2	-0.74	-0.79	-0.69	2.20E-200
leer_data3	-0.75	-0.80	-0.70	6.24E-208
OSA_data1	-0.30	-0.39	-0.21	2.15E-10
OSA_data2	-0.19	-0.30	-0.07	1.41E-03
OSA_data3	-0.02	-0.13	0.09	7.39E-01
paint_data1	0.29	0.02	0.55	3.49E-02
paint_data2	0.17	-0.08	0.43	1.85E-01
paint_data3	-0.05	-0.31	0.21	7.06E-01
site4802_data1	-0.67	-0.92	-0.42	1.82E-07
site4802_data2	-0.98	-1.22	-0.73	3.48E-15
site4802_data3	-1.01	-1.28	-0.74	1.62E-13

Age by sex interaction with amygdala volume

Dataset	coefficient	Confidence Interval (Lower)	Confidence Interval (Upper)	p value
dpn_data1	-0.05	-0.10	0.00	4.28E-02
dpn_data2	-0.05	-0.10	0.00	4.31E-02
dpn_data3	-0.05	-0.10	0.00	5.75E-02
leer_data1	0.56	0.52	0.60	3.65E-159
leer_data2	0.57	0.53	0.61	3.76E-169
leer_data3	0.54	0.50	0.58	1.10E-148
OSA_data1	-0.14	-0.21	-0.07	6.66E-05
OSA_data2	-0.05	-0.12	0.03	2.15E-01
OSA_data3	0.00	-0.07	0.07	9.47E-01
paint_data1	-0.03	-0.15	0.09	6.01E-01
paint_data2	-0.03	-0.13	0.08	6.03E-01
paint_data3	-0.08	-0.20	0.03	1.47E-01
site4802_data1	-0.50	-0.63	-0.36	6.00E-13
site4802_data2	-0.69	-0.82	-0.56	2.00E-24
site4802_data3	-0.72	-0.89	-0.55	3.61E-17

Age by sex interaction with frontal lobe cortical thickness

Dataset	coefficient	Confidence Interval (Lower)	Confidence Interval (Upper)	p value
dpn_data1	9.46E-06	-1.05E-06	2.00E-05	7.76E-02
dpn_data2	-1.02E-05	-2.07E-05	2.62E-07	5.60E-02
dpn_data3	2.35E-06	-8.17E-06	1.29E-05	6.62E-01
leer_data1	1.41E-05	3.35E-06	2.48E-05	1.02E-02
leer_data2	9.40E-06	-1.41E-06	2.02E-05	8.84E-02
leer_data3	1.16E-05	9.05E-07	2.24E-05	3.36E-02
OSA_data1	2.91E-05	-6.45E-06	6.46E-05	1.09E-01
OSA_data2	5.48E-05	1.70E-05	9.26E-05	4.46E-03
OSA_data3	5.49E-05	1.72E-05	9.27E-05	4.36E-03
paint_data1	2.73E-07	-6.83E-06	7.38E-06	9.40E-01
paint_data2	6.15E-06	-4.16E-05	5.39E-05	8.01E-01
paint_data3	3.32E-06	-2.88E-06	9.53E-06	2.94E-01
site4802_data1	-2.63E-04	-2.98E-04	-2.28E-04	2.40E-49
site4802_data2	-2.72E-04	-3.01E-04	-2.43E-04	1.69E-76
site4802_data3	-2.77E-04	-3.10E-04	-2.44E-04	9.20E-62

Age by sex interaction with intracranial volume

Dataset	coefficient	Confidence Interval (Lower)	Confidence Interval (Upper)	p value
dpn_data1	-33.34	-39.54	-27.15	4.94E-26
dpn_data2	-31.72	-37.90	-25.54	7.97E-24
dpn_data3	-28.37	-34.56	-22.18	2.68E-19
leer_data1	-229.63	-242.83	-216.43	1.16E-254
leer_data2	-208.59	-221.79	-195.40	8.47E-211
leer_data3	-220.72	-234.02	-207.42	5.78E-232
OSA_data1	18.32	0.93	35.72	3.90E-02
OSA_data2	23.31	-6.65	53.27	1.27E-01
OSA_data3	28.33	-8.19	64.85	1.28E-01
paint_data1	17.22	2.58	31.86	2.11E-02
paint_data2	4.66	-9.39	18.70	5.16E-01
paint_data3	3.13	-11.19	17.46	6.68E-01
site4802_data1	-348.18	-395.23	-301.12	1.17E-47
site4802_data2	-392.06	-438.33	-345.78	6.45E-62
site4802_data3	-407.28	-476.80	-337.77	1.59E-30