

**Supplementary Table S3** Pairwise comparisons of IntegraMooDS subgroups on *g*-factor performance scores. CON, control subjects; pat-BPD, patients with bipolar disorder; pat-MDD, patients with major depression; pat-SCZ, patients with schizophrenia; rel-MDD, relatives of major depression patients; rel-BPD, relatives of bipolar patients; rel-SCZ, relatives of schizophrenia patients.

IntegraMooDS subgroups		Mean Difference	Std. Error	Significance (P=0.05)	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
<b>CON</b>	pat-BPD	0,396	0,155	0,011	0,092	0,701
	pat-MDD	-0,07	0,15	0,644	-0,364	0,225
	pat-SCZ	0,942	0,163	< 0.001	0,622	1,261
	rel-BPD	0,016	0,118	0,892	-0,215	0,247
	rel-MDD	-0,147	0,107	0,172	-0,358	0,064
	rel-SCZ	0,284	0,12	0,018	0,049	0,519
<b>pat-BPD</b>	CON	-0,396	0,155	0,011	-0,701	-0,092
	pat-MDD	-0,466	0,156	0,003	-0,773	-0,159
	pat-SCZ	0,545	0,169	0,001	0,214	0,876
	rel-BPD	-0,38	0,195	0,051	-0,762	0,002
	rel-MDD	-0,543	0,19	0,004	-0,916	-0,17
	rel-SCZ	-0,112	0,196	0,568	-0,497	0,273
<b>pat-MDD</b>	CON	0,07	0,15	0,644	-0,225	0,364
	pat-BPD	0,466	0,156	0,003	0,159	0,773
	pat-SCZ	1,011	0,166	< 0.001	0,686	1,336
	rel-BPD	0,086	0,191	0,655	-0,29	0,461
	rel-MDD	-0,077	0,187	0,679	-0,444	0,289
	rel-SCZ	0,354	0,193	0,067	-0,024	0,732
<b>pat-SCZ</b>	CON	-0,942	0,163	< 0.001	-1,261	-0,622
	pat-BPD	-0,545	0,169	0,001	-0,876	-0,214
	pat-MDD	-1,011	0,166	< 0.001	-1,336	-0,686
	rel-BPD	-0,926	0,2	< 0.001	-1,319	-0,532
	rel-MDD	-1,088	0,195	< 0.001	-1,471	-0,706
	rel-SCZ	-0,657	0,202	0,001	-1,053	-0,261
<b>rel-BPD</b>	CON	-0,016	0,118	0,892	-0,247	0,215
	pat-BPD	0,38	0,195	0,051	-0,002	0,762
	pat-MDD	-0,086	0,191	0,655	-0,461	0,29
	pat-SCZ	0,926	0,2	< 0.001	0,532	1,319
	rel-MDD	-0,163	0,14	0,245	-0,438	0,112
	rel-SCZ	0,268	0,15	0,075	-0,027	0,564
<b>rel-MDD</b>	CON	0,147	0,107	0,172	-0,064	0,358
	pat-BPD	0,543	0,19	0,004	0,17	0,916
	pat-MDD	0,077	0,187	0,679	-0,289	0,444
	pat-SCZ	1,088	0,195	< 0.001	0,706	1,471
	rel-BPD	0,163	0,14	0,245	-0,112	0,438
	rel-SCZ	0,431	0,142	0,002	0,153	0,71
<b>rel-SCZ</b>	CON	-0,284	0,12	0,018	-0,519	-0,049
	pat-BPD	0,112	0,196	0,568	-0,273	0,497
	pat-MDD	-0,354	0,193	0,067	-0,732	0,024
	pat-SCZ	0,657	0,202	0,001	0,261	1,053
	rel-BPD	-0,268	0,15	0,075	-0,564	0,027
	rel-MDD	-0,431	0,142	0,002	-0,71	-0,153

Based on estimated marginal means

**Supplementary Table S4** Main effects of polygenic scores at all thresholds (S1-S10) on cortical thickness, separately for IMAGEN and IntegraMooDS. Lowest pFWE indicate the lowest corrected p-value observed in the left and right hemisphere. Largest cluster size refers to the largest vertex cluster size (mm<sup>2</sup>) in each hemisphere. Columns F-H show talairach coordinates of the lowest corrected p-value in the left hemisphere and columns I-K show talairach coordinates of the lowest corrected p-value in the right hemisphere. APARC shows the label descriptions of the cortical parcellation atlas by C. Destrieux in Freesurfer for the left and right hemisphere. HCP\_MMP refers to the the label descriptions of the Glasser 2016 cortical parcellation atlas for the left and right hemisphere.

CORTICAL THICKNESS														
IMAGEN														
PSi_Threshold	Lowest pFWE (lh_thickness)	Lowest pFWE (rh_thickness)	Largest cluster size (lh_thickness)	Largest cluster size (rh_thickness)	X(lh)	Y(lh)	Z(lh)	X(rh)	Y(rh)	Z(rh)	APARC(lh)	APARC(rh)	HCP_MMP(lh)	HCP_MMP(rh)
PS1 (PT < 5×10 <sup>-8</sup> )	0,1245	0,4598	0	0	-42,6	-73,68	5,438	27,7	-60,31	34,695	lateraloccipital	superiorparietal	L_MT_ROI	R_MIP_ROI
PS2 (PT < 1×10 <sup>-6</sup> )	0,024	0,0129	158,448883	359,723846	-48,46	-74,58	9,261	49,3	-0,9	-15,2	lateraloccipital	superiortemporal	L_LO3_ROI	R_PI_ROI
PS3 (PT < 1×10 <sup>-4</sup> )	< 0.0001	0,0002	32772,09766	33847,09766	-35,13	-23,35	-22,81	7,738	55,656	-10,34	fusiform	medialorbitofrontal	L_TF_ROI	R_10v_ROI
PS4 (PT < 0.001)	< 0.0001	< 0.0001	41284,16016	41362,79297	-22,08	41,541	24,06	38,66	41,046	23,971	rostralmiddlefrontal	rostralmiddlefrontal	L_9-46d_ROI	R_46_ROI
PS5 (PT < 0.01)	0,0007	0,0003	7056,427734	13367,11328	-35,13	-23,35	-22,81	13,61	35,155	25,781	fusiform	superiorfrontal	L_TF_ROI	R_d32_ROI
PS6 (PT < 0.05)	0,0124	0,0015	707,39447	8845,519531	-28,74	0,46	-27,75	9,384	52,535	-3,011	entorhinal	medialorbitofrontal	L_PeEc_ROI	R_10r_ROI
PS7 (PT < 0.1)	0,0082	0,0019	326,291382	5666,798828	-28,74	0,46	-27,75	11,73	35,895	27,229	entorhinal	superiorfrontal	L_PeEc_ROI	R_d32_ROI
PS8 (PT < 0.2)	0,0144	0,0027	91,403427	5055,89502	-28,74	0,46	-27,75	9,061	54,716	-2,852	entorhinal	medialorbitofrontal	L_PeEc_ROI	R_10r_ROI
PS9 (PT < 0.5)	0,0125	0,0057	78,954491	4169,319336	-28,74	0,46	-27,75	17,23	34,758	-21,72	entorhinal	lateralorbitofrontal	L_PeEc_ROI	R_11l_ROI
PS10 (PT < 1.0)	0,0124	0,005	77,948784	2633,052002	-28,74	0,46	-27,75	17,23	34,758	-21,72	entorhinal	lateralorbitofrontal	L_PeEc_ROI	R_11l_ROI
IntegraMooDS														
PSi_Threshold	Lowest pFWE (lh_thickness)	Lowest pFWE (rh_thickness)	Largest cluster size (lh_thickness)	Largest cluster size (rh_thickness)	X(lh)	Y(lh)	Z(lh)	X(rh)	Y(rh)	Z(rh)	APARC(lh)	APARC(rh)	HCP_MMP(lh)	HCP_MMP(rh)
PS1 (PT < 5×10 <sup>-8</sup> )	0,0119	0,005	240,988	1025,858	-22,83	58,902	12,143	21,1	23,344	54,669	rostralmiddlefrontal	superiorfrontal	L_p10p_ROI	R_s6-8_ROI
PS2 (PT < 1×10 <sup>-6</sup> )	0,0143	0,0016	266,065	3504,313	-22,83	58,902	12,143	56,56	-36,57	-6,822	rostralmiddlefrontal	middletemporal	L_p10p_ROI	R_STSvp_ROI
PS3 (PT < 1×10 <sup>-4</sup> )	0,0086	0,0085	348,763	500,631	-22,83	58,902	12,143	51,42	-3,86	7,716	rostralmiddlefrontal	precentral	L_p10p_ROI	R_43_ROI
PS4 (PT < 0.001)	0,0006	0,0009	3273,729	6439,737	-7,709	-44,74	45,396	58,08	-21,47	-29,79	precuneus	inferiortemporal	L_23c_ROI	R_TE2a_ROI
PS5 (PT < 0.01)	0,0036	0,0029	2360,033	2601,952	-23,25	58,355	12,717	50,91	-4,547	8,063	rostralmiddlefrontal	precentral	L_9a_ROI	R_43_ROI
PS6 (PT < 0.05)	0,0322	0,0094	40,152	760,691	-36,22	2,039	0,867	46,94	-21,1	-26,59	insula	inferiortemporal	L_MI_ROI	R_TF_ROI
PS7 (PT < 0.1)	0,0222	0,0325	152,072	70,542	-30,27	19,968	-21,91	58,58	-23,17	-29,45	lateralorbitofrontal	inferiortemporal	L_47s_ROI	R_TE2a_ROI
PS8 (PT < 0.2)	0,0182	0,0177	174,005	283,612	-36,22	2,039	0,867	58,58	-23,17	-29,45	insula	inferiortemporal	L_MI_ROI	R_TE2a_ROI
PS9 (PT < 0.5)	0,0104	0,0191	649,657	306,802	-23,25	58,355	12,717	43,48	-18,86	-23	rostralmiddlefrontal	inferiortemporal	L_9a_ROI	R_TF_ROI
PS10 (PT < 1.0)	0,0097	0,0253	870,282	237,301	-22,83	58,902	12,143	58,58	-23,17	-29,45	rostralmiddlefrontal	inferiortemporal	L_p10p_ROI	R_TE2a_ROI

**Supplementary Table S5** Main effects of polygenic scores at all thresholds (S1-S10) on surface area, separately for IMAGEN and IntegraMooDS. Lowest pFWE indicate the lowest corrected p-value observed in the left and right hemisphere. Largest cluster size refers to the largest vertex cluster size (mm<sup>2</sup>) in each hemisphere. Columns F-H show talairach coordinates of the lowest corrected p-value in the left hemisphere and columns I-K show talairach coordinates of the lowest corrected p-value in the right hemisphere. APARC shows the label descriptions of the cortical parcellation atlas by C. Destrieux in Freesurfer for the left and right hemisphere. HCP\_MMP refers to the label descriptions of the Glasser 2016 cortical parcellation atlas for the left and right hemisphere.

#### SURFACE AREA

IMAGEN														
PSi_Threshold	Lowest pFWE (lh_area)	Lowest pFWE (rh_area)	Largest cluster size (lh_area)	Largest cluster size (rh_area)	X(lh)	Y(lh)	Z(lh)	X(rh)	Y(rh)	Z(rh)	APARC(lh)	APARC(rh)	HCP_MMP(lh)	HCP_MMP(rh)
PS1 (PT < 5×10 <sup>-8</sup> )	0,087317	0,124625	0	0	-45,15	-71,04	7,184	35,3	-76,46	35,566	lateraloccipital	inferiorparietal	L_MT_ROI	R_PGp_ROI
PS2 (PT < 1×10 <sup>-6</sup> )	0,024505	0,063713	259,596985	0	-43,85	-71,91	5,978	34,9	-72,55	40,365	lateraloccipital	inferiorparietal	L_MT_ROI	R_IP1_ROI
PS3 (PT < 1×10 <sup>-4</sup> )	0,0003	0,0016	30791,18359	10591,37305	-24,95	39,407	31,113	49,7	3,803	-16,43	rostralmiddlefrontal	superiortemporal	L_9-46d_ROI	R_STGa_ROI
PS4 (PT < 0.001)	< 0.0001	< 0.0001	44395,55078	44227,92188	-22,08	41,541	24,06	53,15	-8,565	-2,756	rostralmiddlefrontal	superiortemporal	L_9-46d_ROI	R_TA2_ROI
PS5 (PT < 0.01)	0,0002	0,0011	17278,80469	14021,77832	-35,79	23,604	46,279	8,824	48,674	16,117	caudalmiddlefrontal	superiorfrontal	L_8Av_ROI	R_9m_ROI
PS6 (PT < 0.05)	0,003401	0,006701	1374,788696	1556,432739	-35,31	23,764	46,477	45,89	22,777	31,539	caudalmiddlefrontal	rostralmiddlefrontal	L_8Av_ROI	R_p9-46v_ROI
PS7 (PT < 0.1)	0,015703	0,013803	380,515747	384,821594	-35,31	23,764	46,477	45,89	22,777	31,539	caudalmiddlefrontal	rostralmiddlefrontal	L_8Av_ROI	R_p9-46v_ROI
PS8 (PT < 0.2)	0,044909	0,027205	10,46674	122,534241	-35,31	23,764	46,477	45,89	22,777	31,539	caudalmiddlefrontal	rostralmiddlefrontal	L_8Av_ROI	R_p9-46v_ROI
PS9 (PT < 0.5)	0,064313	0,045009	0	7,319267	-35,31	23,764	46,477	45,89	22,777	31,539	caudalmiddlefrontal	rostralmiddlefrontal	L_8Av_ROI	R_p9-46v_ROI
PS10 (PT < 1.0)	0,064713	0,05141	0	0	-35,31	23,764	46,477	45,89	22,777	31,539	caudalmiddlefrontal	rostralmiddlefrontal	L_8Av_ROI	R_p9-46v_ROI

#### IntegraMooDS

PSi_Threshold	Lowest pFWE (lh_area)	Lowest pFWE (rh_area)	Largest cluster size (lh_area)	Largest cluster size (rh_area)	X(lh)	Y(lh)	Z(lh)	X(rh)	Y(rh)	Z(rh)	APARC(lh)	APARC(rh)	HCP_MMP(lh)	HCP_MMP(rh)
PS1 (PT < 5×10 <sup>-8</sup> )	0,1085	0,06	0	0	-44,77	22,01	35,061	63,64	-8,532	19,532	caudalmiddlefrontal	postcentral	L_8C_ROI	R_1_ROI
PS2 (PT < 1×10 <sup>-6</sup> )	0,0361	0,0028	132,073929	3907,442383	-39,58	-7,78	56,735	58,58	-23,17	-29,45	precentral	inferiortemporal	L_6d_ROI	R_TE2a_ROI
PS3 (PT < 1×10 <sup>-4</sup> )	0,0129	0,0082	2102,220215	2582,749023	-40,66	-8,05	57,708	7,43	40,223	6,515	precentral	rostralanteriorcingulate	L_6d_ROI	R_a24_ROI
PS4 (PT < 0.001)	0,0005	0,0005	17268,07617	14497,2793	-8,153	-50,76	63,943	62,63	-10,52	-20,42	precuneus	middletemporal	L_7Am_ROI	R_TE1a_ROI
PS5 (PT < 0.01)	0,0029	0,0017	8027,92041	7746,904785	-23,46	58,4	11,981	52,36	-44,46	2,856	rostralmiddlefrontal	bankssts	L_p10p_ROI	R_TPOJ1_ROI
PS6 (PT < 0.05)	0,0185	0,0072	366,498871	1909,19397	-16,67	58,136	-13,97	46,94	-21,1	-26,59	rostralmiddlefrontal	inferiortemporal	L_10pp_ROI	R_TF_ROI
PS7 (PT < 0.1)	0,0103	0,0056	1242,577148	2827,921631	-18,59	57,955	-12,55	46,94	-21,1	-26,59	rostralmiddlefrontal	inferiortemporal	L_a10p_ROI	R_TF_ROI
PS8 (PT < 0.2)	0,0092	0,0028	1804,096069	3358,480469	-17,52	58,28	-13,8	46,94	-21,1	-26,59	rostralmiddlefrontal	inferiortemporal	L_10pp_ROI	R_TF_ROI
PS9 (PT < 0.5)	0,0075	0,0064	2299,050049	2804,103271	-23,73	57,775	12,483	58,58	-23,17	-29,45	rostralmiddlefrontal	inferiortemporal	L_p10p_ROI	R_TE2a_ROI
PS10 (PT < 1.0)	0,0062	0,0062	2505,432617	2954,635254	-23,73	57,775	12,483	58,58	-23,17	-29,45	rostralmiddlefrontal	inferiortemporal	L_p10p_ROI	R_TE2a_ROI

**Supplementary Table S6** Mediation effects of polygenic scores at all thresholds (S1-S10) on g-factor via cortical thickness, separately for IMAGEN and IntegraMooDS. Lowest pFWE indicate the lowest corrected p-value observed in the left and right hemisphere. Largest cluster size refers to the largest vertex cluster size (mm<sup>2</sup>) in each hemisphere. Columns F-H show talairach coordinates of the lowest corrected p-value in the left hemisphere and columns I-K show talairach coordinates of the lowest corrected p-value in the right hemisphere. APARC shows the label descriptions of the cortical parcellation atlas by C. Destrieux in Freesurfer for the left and right hemisphere. HCP\_MMP refers to the the label descriptions of the Glasser 2016 cortical parcellation atlas for the left and right hemisphere.

#### CORTICAL THICKNESS

##### IMAGEN

PSi_Threshold	Lowest pFWE (lh_thickness)	Lowest pFWE (rh_thickness)	Largest cluster size (lh_thickness)	Largest cluster size (rh_thickness)	X(lh)	Y(lh)	Z(lh)	X(rh)	Y(rh)	Z(rh)	APARC(lh)	APARC(rh)	HCP_MMP(lh)	HCP_MMP(rh)	
PS1 (PT < 5×10 <sup>-8</sup> )	0,5644	0,459	0,000	0,000	0,000	-47,23	-72,63	8,094	39,52	-75,11	-14,68	lateraloccipital	lateraloccipital	L_MT_ROI	R_PIT_ROI
PS2 (PT < 1×10 <sup>-6</sup> )	0,0461	0,0107	2,443	2,443	277,331	-47,31	-0,315	-18,05	49,3	-0,9	-15,2	superiortemporal	superiortemporal	L_PI_ROI	R_PI_ROI
PS3 (PT < 1×10 <sup>-4</sup> )	< 0.0001	0,0006	19586,467	10023,793	-51,07	-7,171	47,498	49,3	-0,9	-15,2	precentral	superiortemporal	L_55b_ROI	R_PI_ROI	
PS4 (PT < 0.001)	< 0.0001	< 0.0001	37452,512	34711,297	-22,08	41,541	24,06	49,42	-6,394	-11,91	rostralmiddlefrontal	superiortemporal	L_9-46d_ROI	R_TA2_ROI	
PS5 (PT < 0.01)	0,0003	0,0007	16852,887	9000,147	-17,32	57,987	-4,413	7,161	36,305	46,135	rostralmiddlefrontal	superiorfrontal	L_p10p_ROI	R_8BM_ROI	
PS6 (PT < 0.05)	0,0022	0,0017	2893,570	3260,671	-51,82	-32,5	6,447	47,77	30,886	24,979	superiortemporal	rostralmiddlefrontal	L_PBelt_ROI	R_p9-46v_ROI	
PS7 (PT < 0.1)	0,0025	0,0017	1902,000	2490,322	-51,82	-32,5	6,447	47,77	30,886	24,979	superiortemporal	rostralmiddlefrontal	L_PBelt_ROI	R_p9-46v_ROI	
PS8 (PT < 0.2)	0,0059	0,0023	693,237	2432,367	-35,13	-23,35	-22,81	6,815	38,817	47,105	fusiform	superiorfrontal	L_TF_ROI	R_8BL_ROI	
PS9 (PT < 0.5)	0,0107	0,0083	489,733	1227,487	-51,82	-32,5	6,447	6,815	38,817	47,105	superiortemporal	superiorfrontal	L_PBelt_ROI	R_8BL_ROI	
PS10 (PT < 1.0)	0,0124	0,0078	444,188	1084,963	-52,95	-31,28	5,775	6,815	38,817	47,105	superiortemporal	superiorfrontal	L_PBelt_ROI	R_8BL_ROI	

##### IntegraMooDS

PSi_Threshold	Lowest pFWE (lh_thickness)	Lowest pFWE (rh_thickness)	Largest cluster size (lh_thickness)	Largest cluster size (rh_thickness)	X(lh)	Y(lh)	Z(lh)	X(rh)	Y(rh)	Z(rh)	APARC(lh)	APARC(rh)	HCP_MMP(lh)	HCP_MMP(rh)
PS1 (PT < 5×10 <sup>-8</sup> )	0,0082	0,004	474,875	1601,279	-22,29	59,328	11,594	56,05	-36,88	-6,563	rostralmiddlefrontal	middletemporal	L_p10p_ROI	R_STSvp_ROI
PS2 (PT < 1×10 <sup>-6</sup> )	0,0072	0,0009	637,607	4040,270	-22,29	59,328	11,594	64,08	-28,96	-10,58	rostralmiddlefrontal	middletemporal	L_p10p_ROI	R_TE1m_ROI
PS3 (PT < 1×10 <sup>-4</sup> )	0,0037	0,0022	2508,011	3056,846	-22,29	59,328	11,594	34,96	44,047	22,839	rostralmiddlefrontal	rostralmiddlefrontal	L_p10p_ROI	R_9-46d_ROI
PS4 (PT < 0.001)	0,0012	0,0011	4382,732	5440,993	-22,29	59,328	11,594	46,93	32,964	24,541	rostralmiddlefrontal	rostralmiddlefrontal	L_p10p_ROI	R_p9-46v_ROI
PS5 (PT < 0.01)	0,0092	0,004	374,873	1242,284	-36,56	48,739	16,789	42,79	38,167	24,381	rostralmiddlefrontal	rostralmiddlefrontal	L_9-46d_ROI	R_p9-46v_ROI
PS6 (PT < 0.05)	0,0279	0,0121	58,449	142,145	-33,67	5,034	4,854	43,48	-18,86	-23	insula	inferiortemporal	L_MI_ROI	R_TF_ROI
PS7 (PT < 0.1)	0,0359	0,0207	27,625	55,909	-33,67	5,034	4,854	43,48	-18,86	-23	insula	inferiortemporal	L_MI_ROI	R_TF_ROI
PS8 (PT < 0.2)	0,0134	0,0108	268,242	323,702	-27,79	57,16	-8,752	43,48	-18,86	-23	rostralmiddlefrontal	inferiortemporal	L_a10p_ROI	R_TF_ROI
PS9 (PT < 0.5)	0,0082	0,0092	832,471	497,897	-28,3	57,385	-9,234	43,48	-18,86	-23	rostralmiddlefrontal	inferiortemporal	L_a10p_ROI	R_TF_ROI
PS10 (PT < 1.0)	0,0092	0,0087	789,227	538,844	-27,79	57,16	-8,752	43,48	-18,86	-23	rostralmiddlefrontal	inferiortemporal	L_a10p_ROI	R_TF_ROI

**Supplementary Table S7** Mediation effects of polygenic scores at all thresholds (S1-S10) on g-factor via surface area, separately for IMAGEN and IntegraMooDS. Lowest pFWER indicate the lowest corrected p-value observed in the left and right hemisphere. Largest cluster size refers to the largest vertex cluster size (mm<sup>2</sup>) in each hemisphere. Columns F-H show talairach coordinates of the lowest corrected p-value in the left hemisphere and columns I-K show talairach coordinates of the lowest corrected p-value in the right hemisphere. APARC shows the label descriptions of the cortical parcellation atlas by C. Destrieux in Freesurfer for the left and right hemisphere. HCP\_MMP refers to the the label descriptions of the Glasser 2016 cortical parcellation atlas for the left and right hemisphere.

## SURFACE AREA

### IMAGEN

PSi_Threshold	Lowest pFWER (lh_area)	Lowest pFWER (rh_area)	Largest cluster size (lh_area)	Largest cluster size (rh_area)	X(lh)	Y(lh)	Z(lh)	X(rh)	Y(rh)	Z(rh)	APARC(lh)	APARC(rh)	HCP_MMP(lh)	HCP_MMP(rh)
PS1 (PT < 5×10 <sup>-8</sup> )	0,2762	0,3782	0,000	0,000	-46,08	-72,38	7,02	38,56	-81,18	27,618	lateraloccipital	inferiorparietal	L_MT_ROI	R_PGp_ROI
PS2 (PT < 1×10 <sup>-6</sup> )	0,0639	0,0442	0,000	27,779	-29,16	57,073	-9,144	8,929	56,514	6,571	rostralmiddlefrontal	superiorfrontal	L_a10p_ROI	R_9m_ROI
PS3 (PT < 1×10 <sup>-4</sup> )	< 0.0001	0,0005	29264,506	14282,280	-21,81	56,186	-13,19	8,977	57,159	7,132	rostralmiddlefrontal	superiorfrontal	L_11l_ROI	R_9m_ROI
PS4 (PT < 0.001)	< 0.0001	< 0.0001	42660,840	43615,754	-22,08	41,541	24,06	46,94	-21,1	-26,59	rostralmiddlefrontal	inferiortemporal	L_9-46d_ROI	R_TF_ROI
PS5 (PT < 0.01)	< 0.0001	< 0.0001	25425,553	16911,369	-17,32	57,987	-4,413	9,505	48,99	14,757	rostralmiddlefrontal	superiorfrontal	L_p10p_ROI	R_9m_ROI
PS6 (PT < 0.05)	0,0022	0,0015	6178,632	6341,946	-29,18	56,896	-10,26	46,6	23,724	31,427	rostralmiddlefrontal	rostralmiddlefrontal	L_11l_ROI	R_p9-46v_ROI
PS7 (PT < 0.1)	0,0042	0,0029	4394,775	4142,961	-29,16	57,073	-9,144	45,89	22,777	31,539	rostralmiddlefrontal	rostralmiddlefrontal	L_a10p_ROI	R_p9-46v_ROI
PS8 (PT < 0.2)	0,0063	0,0042	4211,943	2115,740	-29,16	57,073	-9,144	45,89	22,777	31,539	rostralmiddlefrontal	rostralmiddlefrontal	L_a10p_ROI	R_p9-46v_ROI
PS9 (PT < 0.5)	0,0064	0,0115	4406,553	521,712	-29,62	57,059	-9,723	45,89	22,777	31,539	rostralmiddlefrontal	rostralmiddlefrontal	L_11l_ROI	R_p9-46v_ROI
PS10 (PT < 1.0)	0,0076	0,0124	2093,090	490,109	-29,62	57,059	-9,723	45,89	22,777	31,539	rostralmiddlefrontal	rostralmiddlefrontal	L_11l_ROI	R_p9-46v_ROI

### IntegraMooDS

PSi_Threshold	Lowest pFWER (lh_area)	Lowest pFWER (rh_area)	Largest cluster size (lh_area)	Largest cluster size (rh_area)	X(lh)	Y(lh)	Z(lh)	X(rh)	Y(rh)	Z(rh)	APARC(lh)	APARC(rh)	HCP_MMP(lh)	HCP_MMP(rh)
PS1 (PT < 5×10 <sup>-8</sup> )	0,0857	0,0283	0,000	112,021	-23,49	57,734	13,212	65,3	-26,42	-12,8	rostralmiddlefrontal	middletemporal	L_9a_ROI	R_TE1m_ROI
PS2 (PT < 1×10 <sup>-6</sup> )	0,0244	0,0003	114,013	4509,865	-47,13	-78,54	6,384	62,39	-9,44	-19,97	lateraloccipital	middletemporal	L_LO3_ROI	R_TE1a_ROI
PS3 (PT < 1×10 <sup>-4</sup> )	0,0038	0,0009	3792,878	6078,794	-23,49	57,734	13,212	5,605	31,58	-7,035	rostralmiddlefrontal	rostralanteriorcingulate	L_9a_ROI	R_a24_ROI
PS4 (PT < 0.001)	0,0002	< 0.0001	9698,590	11148,153	-23,25	58,355	12,717	6,6	35,606	15,767	rostralmiddlefrontal	rostralanteriorcingulate	L_9a_ROI	R_p24_ROI
PS5 (PT < 0.01)	0,0017	0,0011	5220,473	8333,247	-23,25	58,355	12,717	6,588	37,175	-2,865	rostralmiddlefrontal	rostralanteriorcingulate	L_9a_ROI	R_a24_ROI
PS6 (PT < 0.05)	0,0084	0,0081	838,145	1218,548	-17,07	58,289	-14,43	6,588	37,175	-2,865	rostralmiddlefrontal	rostralanteriorcingulate	L_10pp_ROI	R_a24_ROI
PS7 (PT < 0.1)	0,0048	0,007	1751,574	1738,670	-17,07	58,289	-14,43	58,58	-23,17	-29,45	rostralmiddlefrontal	inferiortemporal	L_10pp_ROI	R_TE2a_ROI
PS8 (PT < 0.2)	0,0037	0,0034	2879,789	2786,787	-13,87	57,902	-7,452	6,197	36,335	-3,754	rostralmiddlefrontal	rostralanteriorcingulate	L_10pp_ROI	R_a24_ROI
PS9 (PT < 0.5)	0,0021	0,0026	3524,820	2822,033	-23,73	57,775	12,483	6,602	37	-3,415	rostralmiddlefrontal	rostralanteriorcingulate	L_p10p_ROI	R_a24_ROI
PS10 (PT < 1.0)	0,0017	0,0022	3635,391	2867,298	-23,78	56,992	12,122	6,602	37	-3,415	rostralmiddlefrontal	rostralanteriorcingulate	L_p10p_ROI	R_a24_ROI

**Supplementary Table S8** *Post hoc* estimation of effect Sizes (partial eta squared;  $\eta^2$ ) at all significant PSi thresholds including: the total effect (Path A; PSi on g-factor), Path A (PSi on brain structure), Path B (Brain structure on g-factor), as well as the partial mediation effect (Path C').

IMAGEN	Total Effect (Path C)	Path A Cortical Thickness	Path A Surface Area	Path B Cortical Thickness	Path B Surface Area	Partial Mediation Effect Cortical Thickness	Partial Mediation Effect Surface Area	Percentage of explainable variance in g- factor explained by mediation Cortical	Percentage of explainable variance in g- factor explained by mediation
PS1	0,007341444	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
PS2	0,011288056	0,010637563	0,007128391	0,023009107	0,024495129	0,002810384	0,002135464	24,90%	18,92%
PS3	0,034070055	0,015968479	0,013033482	0,03296986	0,030807555	0,006652322	0,005801591	19,53%	17,03%
PS4	0,044056335	0,017223893	0,013469027	0,033639848	0,0307803	0,007488177	0,006518521	17,00%	14,80%
PS5	0,04695954	0,012664593	0,009577288	0,035199446	0,032196801	0,006667483	0,0056281	14,20%	11,98%
PS6	0,052673735	0,010745356	0,00878965	0,033123016	0,028450697	0,006331695	0,005195855	12,02%	9,86%
PS7	0,053783554	0,010329098	0,007851592	0,032593943	0,028085812	0,006191664	0,004923564	11,51%	9,15%
PS8	0,053856674	0,009052642	0,006288853	0,032647805	0,027802607	0,00573453	0,004290712	10,65%	7,97%
PS9	0,05080042	0,009507424	0,005495145	0,030567196	0,026976478	0,005639204	0,003859965	11,10%	7,60%
PS10	0,050385935	0,009122938	N.A.	0,028491337	N.A.	0,005336247	N.A.	10,59%	6,28%

IntegraMoodS	Total Effect (Path C)	Path A Cortical Thickness	Path A Surface Area	Path B Cortical Thickness	Path B Surface Area	Partial Mediation Effect Cortical Thickness	Partial Mediation Effect Surface Area	Percentage of explainable variance in g- factor explained by mediation Cortical Thickness	Percentage of explainable variance in g- factor explained by mediation Surface Area
PS1	N.A.	0,023710459	N.A.	0,007637632	N.A.	0,0018693	N.A.	24,88%	N.A.
PS2	0,01400802	0,033905557	0,022968542	0,026332729	0,022941023	0,005740155	0,004521918	40,98%	32,28%
PS3	0,013978679	0,021330956	0,014364423	0,009089858	0,014390761	0,002797127	0,002914643	20,01%	20,85%
PS4	0,027986736	0,028084772	0,021597315	0,028414299	0,024332036	0,00759893	0,006231006	27,15%	22,26%
PS5	0,028122722	0,019231866	0,021463675	0,009066923	0,018182193	0,003439244	0,005414326	12,23%	19,25%
PS6	0,023449613	0,023978284	0,017451837	0,017872337	0,015780719	0,005219242	0,004145528	22,26%	17,68%
PS7	0,024505001	0,012148968	0,021441027	0,010886008	0,017097051	0,003028545	0,004943961	12,36%	20,18%
PS8	0,020475214	0,024107165	0,021619755	0,015767443	0,016290359	0,004629118	0,004340062	22,61%	21,20%
PS9	0,021363345	0,022828202	0,020505194	0,013884041	0,024852741	0,004386633	0,005123405	20,53%	23,98%
PS10	0,020631827	0,027669158	0,020491315	0,013532271	0,024842213	0,004322695	0,005028373	20,95%	24,37%

