Supplementary Materials

Supplementary Figure 1

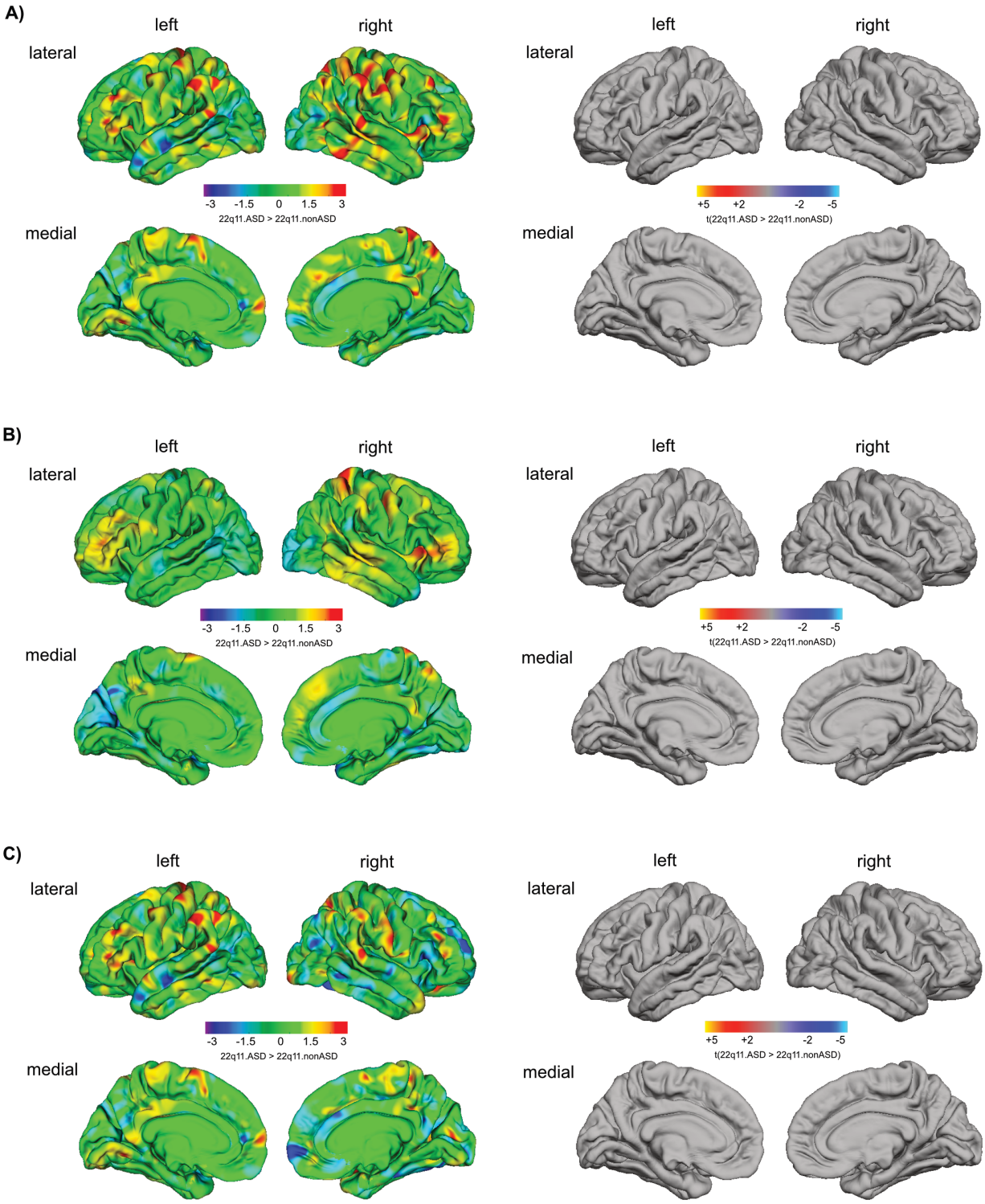

Figure Caption: Significant differences in cortical volume (A), surface area (B) and cortical thickness (C) between individuals with 22q11DS meeting gold-standard criteria for ASD (n=10; i.e. above cut-offs for all three domains of the ADI) compared to 22q11.2DS who do not meet gold-standard diagnostic criteria (n=45). The left panel shows the un-thresholded *t*-maps where increased parameter estimates in 22q11.ASD relative to 22q11.nonASD are displayed in yellow-red, and decreased parameter estimates in 22q11.ASD relative to 22q11.nonASD are displayed in cyan-blue. The right panel shows the random-field-theory-based cluster-corrected ($p<0.05$, two-tailed) difference map indicating that there were no significant clusters where 22q11.ASD had significantly reduced or increased cortical volume, surface area or cortical thickness compared to22q11.nonASD.

Supplementary Figure 2

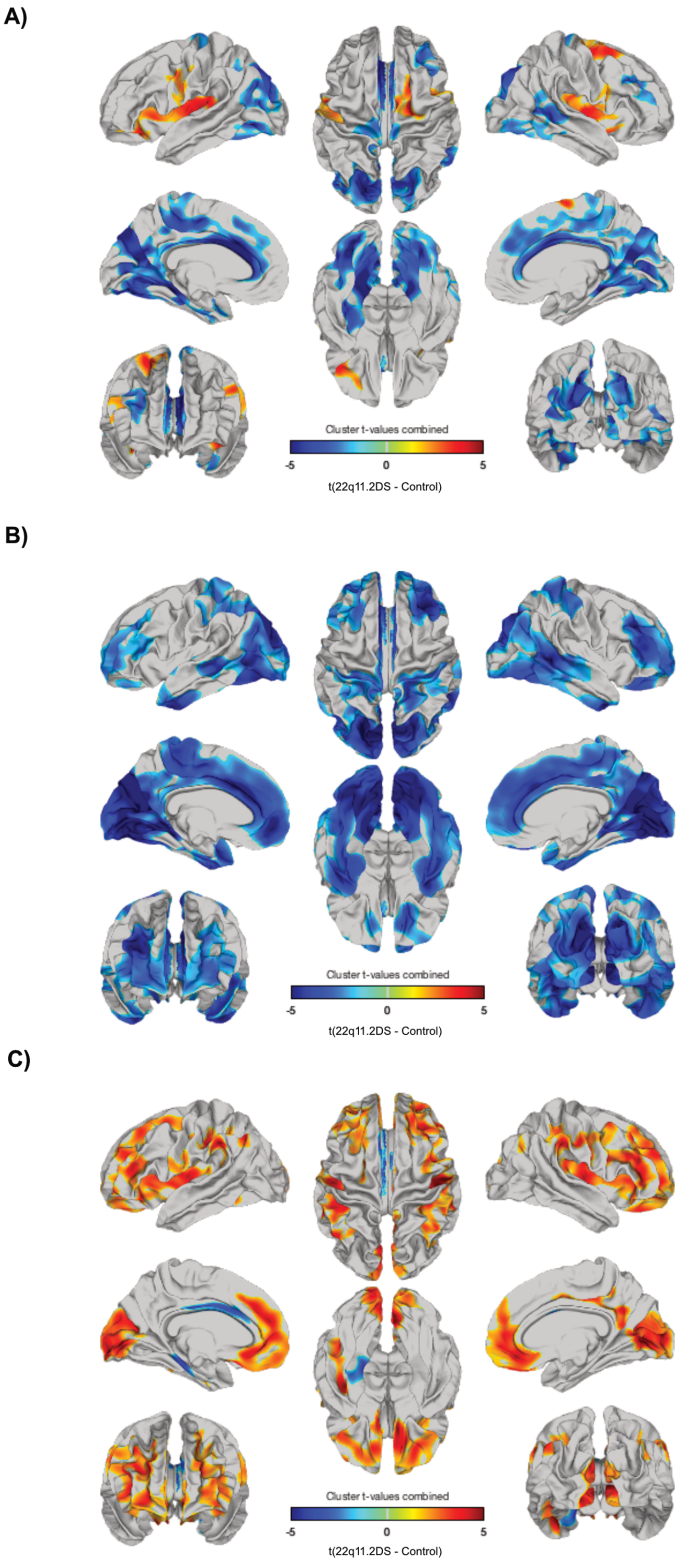

Figure Caption. Significant differences in cortical volume (A), surface area (B) and cortical thickness (C) in individuals with 22q11.2DS compared to neurotypical controls when controlling for antipsychotic medication. The figure shows the random-field-theory (RFT)-based cluster-corrected (p<0.05, two-tailed) where increases in 22q11.2DS relative to controls are indicated in yellow-red and decreases in cyan-blue.

Supplementary Figure 3

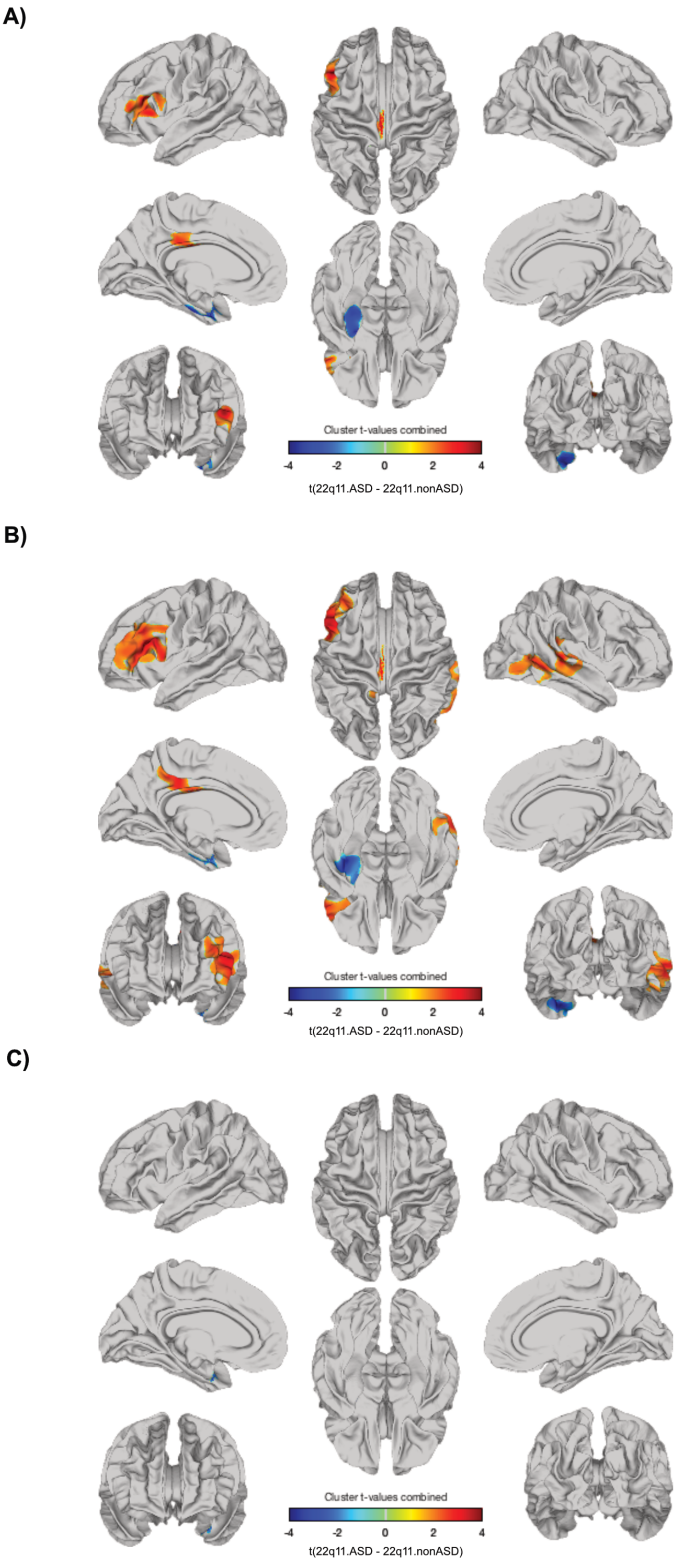

Figure Caption. Significant differences in cortical volume (A), surface area (B), and cortical thickness (C) in individuals with 22q11.ASD meeting ADI-R social and communication domain cut-offs compared to 22q11.nonASD when controlling for antipsychotic medication. The figure shows the random-field-theory (RFT)-based cluster-corrected (p<0.05, two-tailed) where increases in 22q.ASD relative to 22q11.nonASD are indicated in yellow-red, and decreases in cyan-blue.

Supplementary Table 1: Clusters with significant increased and decreased cortical volume (CV) in 22q11.2DS compared to controls

Contrast	Cluster	Region Labels	Hemisphere	BA	Vertices	Talairach x	Talairach y	Talairach z	t_{max}	$p_{cluster}$
CV										
22q11.2DS > Control										
	1	Insula, lateral orbital frontal cortex, pars orbitalis, superior temporal gyrus & transverse temporal cortex	L	22, 41-42, 47	5598	-35	-19	-1	4.69	1.1×10^{-4}
	2	Insula, postcentral & precentral gyrus	R	1-4, 6	5024	36	-12	-5	3.96	8.3×10^{-4}
	3	Precentral gyrus & superior frontal gyrus	R	4, 6	3255	21	10	53	4	3.9×10^{-3}
	4	Postcentral & precentral gyrus	L	1-4	2828	-52	0	34	3.12	4.01×10^{-2}
22q11.2DS < Control										
	1	Caudal anterior-cingulate cotex, cuneus cortex, fusiform gyrus, inferior parietal cortex, inferior temporal gyrus, isthmus-cingulate cortex, lateral occipital cortex, lingual gyrus, paracentral lobule, parahippocampal gyrus, pericalcarine cortex, postcentral gyrus, posterior-cingulate cortex, precentral gyrus, precuneus cortex, rostral anterior cingulate cortex, superior frontal gyrus & superior parietal cortex	L	4-5, 7, 9, 19-20, 24, 37, 40	33144	-22	-44	-4	-8.32	8.12×10^{-6}
	2	Caudal anterior-cingulate cotex, cuneus cortex, fusiform gyrus, inferior parietal cortex, inferior temporal gyrus, isthmus-cingulate cortex, lateral occipital cortex, lingual gyrus, middle temporal gyrus, paracentral lobule, parahippocampal gyrus, pericalcarine cortex, posterior-cingulate cortex, precentral gyrus, precuneus cortex, rostral anterior cingulate cortex, superior frontal gyrus & superior parietal cortex	R	4-5, 7, 9, 19-21, 24, 37, 40	31466	21	-39	-6	-6.08	8.12×10^{-6}
	3	Postcentral gyrus & supramarginal gyrus	L	20, 24, 37	2038	-36	-29	-16	-4.85	8.23×10^{-6}
	4	Isthmus-cingulate coretx, posterior-cingulate cortex & precuneus cortex	R	46	2668	31	38	18	-3.67	1.69×10^{-3}
	5	Fusiform gyrus & inferior teporal gyrus	L	22	2415	-54	-18	2	-5.08	4.24×10^{-2}

Hemisphere: *L;* Left, *R;* Right; *BA*: approxminate Brodmann areas; vertices: number of vertices within the cluster; tmax; maxiumum t-statistic within the cluster; *P*cluster: cluster-corrected *p*-value.

Supplementary Table 2: Clusters with significant increased and decreased surface area (SA) in 22q11.2DS compared to controls

Contrast	Cluster	Region Labels	Hemisphere	BA	Vertices	Talairach			t_{max}	$p_{cluster}$
						x	y	z		
SA										
22q11.2DS < Control										
	1	Caudal anterior-cingulate cortex, cuneus cortex, entorhinal cortex, frontal pole, fusiform gyrus, inferior parietal cortex, inferior temporal gyrus, isthmus-cingulate cortex, lateral occipital cortex, lingual gyrus, medial orbital frontal cortex, middle temporal gyrus, paracentrale lobule, Parahippocampal gyrus, pericalcarine cortex, postcentral gyrus, posterior-cingulate cortex, precentral gyrus, precuneus cortex, posterior-cingulate cortex, rostral middle frontal gyrus, superior frontal gyrus, superior parietal cortex, superior temporal gyrus, temporal pole.	L	1-7, 9-11, 17, 19, 20-24, 32-33, 37-38, 40	54454	-15	-65	15	-8.04	1.8×10^{-6}
	2	Banks superior temporal sulcus, cuneus cortex, entorhinal cortex, fusiform gyrus, inferior parietal cortex, inferior temporal gyrus, isthmus-cingulate cortex, lateral occipital cortex, lingual gyrus, middle temporal gyrus, parahippocampal gyrus, pericalcarine cortex, precuneus cortex, superior parietal cortex, superior temporal gyrus, temporal pole.	R	5, 7, 17, 19, 20-24, 28, 37-38, 40	33085	15	-78	13	-8.1	1.8×10^{-6}
	3	Caudal anterior-cingulate cortex, medial orbital frontal cortex, paracentrale lobule, posterior-cingulate cortex, precuneus cortex, rostral anterior cingulate cortex, superior frontal gyrus.	R	4, 6, 9, 10-11, 24, 32-33	12652	14	22	27	-5.19	1.8×10^{-6}
	4	Pars triangularis, rostral middle frontal gyrus	R	45, 46	7534	35	35	22	-5.67	2.41×10^{-5}
	5	Postcentral gyrus, superior parietal cortex	R	1-3, 5, 7	4336	19	-42	58	-4.68	2.52×10^{-4}
	6	Anterior cingulate cortex	R	24	27	3	7	25	-4.43	2.27×10^{-3}

Hemisphere: *L;* Left, *R;* Right; *BA*: approxminate Brodmann areas; vertices: number of vertices within the cluster; tmax; maxiumum t-statistic within the cluster; *P*cluster: cluster-corrected *p*-value.

Supplementary Table 3: Clusters with significant increased and decreased cortical thickness (CT) in 22q11.2DS compared to controls

Contrast	Cluster	Region Labels	Hemisphere	BA	Vertices	Talairach x	Talairach y	Talairach z	t_{max}	$p_{cluster}$
CT										
22q11.2DS > Control										
	1	Caudal middle frontal gyrus, Insula, Lateral orbital frontal coretx, medial oribitofrontal cortex, pars orbitalis, pars triangularis, postcentral gyrus, precentral gyrus, rostral anterior cingulate cortex, rostral middle frontal gyrus, superior frontal gyrus, frontal pole & transverse temporal cortex.	L	1-4, 6, 10-11, 32, 41-42, 45-47	22597	-45	-13	28	4.59	9.9×10^{-6}
	2	Caudal middle frontal gyrus, Insula, Lateral orbital frontal coretx, medial oribitofrontal cortex, pars orbitalis, pars triangularis, pars opercularis, postcentral gyrus, precentral gyrus, rostral anterior cingulate cortex, rostral middle frontal gyrus, superior frontal gyrus & supramarginal gyrus.	R	1-4, 6, 10-11, 32, 40, 45-47	22476	10	36	-11	4.48	9.9×10^{-6}
	3	Caudal middle frontal gyrus, inferior parietal cortex, postcentral gyrus, precentral gyrus, superior parietal gyrus & supramarginal gurys.	R	1-4, 7, 40, 46	10485	42	-12	29	5.17	9.9×10^{-6}
	4	Caudal middle frontal gyrus & precentral gyrus	L	4, 6, 46	1926	-39	11	44	3.12	2.15×10^{-2}
	5	Cuneus cortex, lateral occipital cortex, lingual gyrus & pericalcarine cortex.	R	17 - 19	5168	6	-71	6	5.06	1.55×10^{-5}
	6	Cuneus cortex, lateral occipital cortex, lingual gyrus & pericalcarine cortex.	L	17 - 19	4706	-5	-81	3	4.64	2.79×10^{-5}
	7	Postcentral gyrus & supramarginal gyrus	L	1-3, 40	3902	-56	-38	35	4.79	1.59×10^{-4}
	8	Isthmus-cingulate coretx, posterior-cingulate cortex & precuneus cortex	R	7, 31	3134	10	-52	30	3.73	1.01×10^{-4}
	9	Fusiform gyrus & inferior teporal gyrus	L	20, 37	1883	-38	-14	-21	4.7	1.90×10^{-2}
	10	Inferior temporal gyrus & middle temporal gyrus	L	20, 21	1949	-52	-8	-24	4.71	2.39×10^{-2}
22q11.2DS < Control										
	1	Caudal anterior-cingulate cortex & posterior-cingulate cortex	L	24	1800	-1	21	16	-5.2	9.91×10^{-6}
	2	Parahippocampal gyrus	L	34	1131	-22	-31	-10	-4.4	5.3×10^{-3}

Hemisphere: *L;* Left, *R;* Right; *BA* : approxminate Brodmann areas; vertices: number of vertices within the cluster; tmax; maxiumum t-statistic within the cluster; *P*cluster: cluster-corrected *p*-value.

Supplementary Table 4: Clusters with significant increased and decreased cortical volume (CV) and surface area (SA) in 22q11.ASD compared to 22q11.nonASD

Contrast	Cluster	Region Labels	Hemisphere	BA	Vertices	Talairach x	Talairach y	Talairach z	t_{max}	$p_{cluster}$
CV										
22q11.AS > 22q11.nonASD										
	1	Posterior-cingulate cortex	L	24	1411	-1	-12	27	4.01	4.7×10^{-5}
	2	Insula, pars opercularis, pars triangularis & rostral middle frontal gyrus	L	45-46	3038	-45	24	14	3.87	1.2×10^{-2}
22q11.AS < 22q11.nonASD										
	1	Entorhinal cortex & parahippocampal gyrus	L	27-28/34	1288	-25	-4	-26	-4.6	1.43×10^{-5}
SA										
22q11.AS > 22q11.nonASD										
	1	Posterior-cingulate cortex	L	24	2245	-3	-12	27	3.85	1.5×10^{-5}
	2	Banks superior temporal sulcus, inferior cortex, inferior temporal gyrus, lateral occipital cortex, midlle temporal gyrus, superior temporal gyrus & supramarginal gyrus	R	19-22,37,39-42	6855	61	-32	7	2.96	2.5×10^{-3}
	3	Caudal middle frontal gyrus, insula, pars opercularis, pars triangularis, precentral gyrus & rostral middle frontal gyrus	L	4, 6, 44-46	8325	-47	21	25	3.39	4.1×10^{-3}
22q11.AS < 22q11.nonASD										
	1	Entorhinal cortex & fusiform gyrus	L	28, 34, 37	1438	-25	-4	-26	-4.46	1.5×10^{-5}

Hemisphere: *L;* Left, *R;* Right; *BA* : approxminate Brodmann areas; vertices: number of vertices within the cluster; tmax; maxiumum t-statistic within the cluster; *P*cluster: cluster-corrected *p*-value.

Supplementary Figure 4

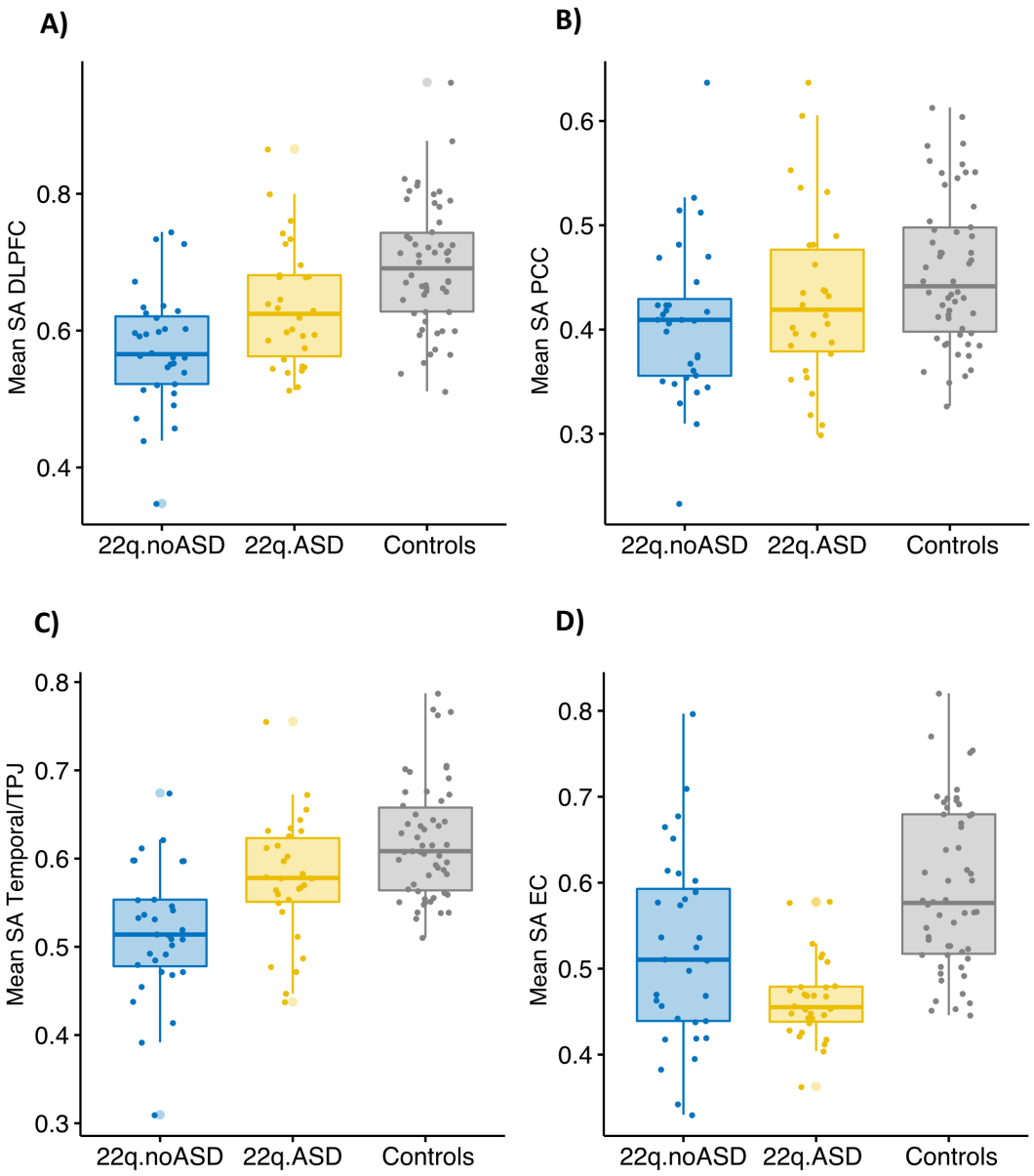

Figure Caption. Mean Surface Area (SA) in the dorsolateral-prefrontal cortex (A), posterior cingulate cortex (B), temporal-parietal junction (C), and entorhinal cortex (D) between 22q11.noASD (blue), 22q11.ASD (yellow) and typically developing controls (grey) extracted from the clusters of significant-between group differences shown in Figures 1 and 2 of the manuscript.