

Additional table 1. Association analyses between autistic-like traits and five SNPs after adjustment for age^a.

Autistic-like traits	SNP	All			Boys			Girls			
		p-value	effect size ^b	CI (95%)	p-value	effect size ^b	CI (95%)	p-value	effect size ^b	CI (95%)	
CDH 9/10	rs4307059	0.734	-0.007	0.033, 0.047	0.632	0.016	-0.051, 0.083	0.732	0.007	-0.033, 0.048	
CNTNAP2	rs2710102	0.507	0.013	-0.026, 0.052	0.647	0.015	-0.050, 0.080	0.716	0.008	-0.033, 0.048	
CNTNAP2	rs7794745	0.104	-0.034	-0.075, 0.007	0.045	-0.069	-0.136, -0.002	0.712	0.008	-0.034, 0.050	
RELN	rs362691	0.343	-0.028	-0.086, 0.030	0.628	-0.024	-0.120, 0.072	0.676	-0.013	-0.072, 0.047	
SHANK3	rs9616915	0.196	-0.025	-0.064, 0.013	0.426	-0.026	-0.089, 0.038	0.448	-0.015	-0.055, 0.024	
<i>Restricted and Repetitive behavior</i>											
CDH 9/10	rs4307059	0.159	0.011	-0.004, 0.027	0.302	0.014	-0.013, 0.041	0.164	0.011	-0.005, 0.028	
CNTNAP2	rs2710102	0.583	0.004	-0.011, 0.020	0.565	0.008	-0.018, 0.033	0.888	-0.001	-0.017, 0.015	
CNTNAP2	rs7794745	0.127	-0.012	-0.028, 0.004	0.081	-0.024	-0.051, 0.003	0.871	-0.001	-0.018, 0.015	
RELN	rs362691	0.353	-0.011	-0.034, 0.012	0.738	-0.007	-0.045, 0.032	0.623	-0.006	-0.029, 0.018	
SHANK3	rs9616915	0.184	-0.010	-0.026, 0.005	0.274	-0.014	-0.040, 0.011	0.665	-0.003	-0.019, 0.012	
<i>Social interaction impairment</i>											
CDH 9/10	rs4307059	0.794	-0.002	-0.018, 0.014	0.762	-0.004	-0.030, 0.022	0.673	0.004	-0.014, 0.022	
CNTNAP2	rs2710102	0.833	-0.002	-0.017, 0.014	0.652	-0.006	-0.031, 0.020	0.762	0.003	-0.015, 0.020	
CNTNAP2	rs7794745	0.31	-0.008	-0.025, 0.008	0.050	-0.026	-0.053, <0.01	0.303	0.010	-0.009, 0.028	
RELN	rs362691	0.946	-0.001	-0.024, 0.023	0.834	0.004	-0.034, 0.042	0.975	<0.001	-0.026, 0.026	
SHANK3	rs9616915	0.165	-0.011	-0.027, 0.005	0.185	-0.017	-0.042, 0.008	0.779	-0.002	-0.02, 0.015	
<i>Language impairment</i>											
CDH 9/10	rs4307059	0.732	-0.003	-0.018, 0.013	0.698	0.005	-0.020, 0.030	0.352	-0.008	-0.026, 0.009	
CNTNAP2	rs2710102	0.321	0.008	-0.008, 0.023	0.359	0.012	-0.013, 0.036	0.537	0.006	-0.012, 0.023	
CNTNAP2	rs7794745	0.184	-0.011	-0.027, 0.005	0.292	-0.014	-0.039, 0.012	0.514	-0.006	-0.025, 0.012	
RELN	rs362691	0.289	-0.012	-0.035, 0.011	0.305	-0.019	-0.056, 0.017	0.689	-0.005	-0.032, 0.021	
SHANK3	rs9616915	0.841	-0.002	-0.017, 0.014	0.635	0.006	-0.018, 0.030	0.434	-0.007	-0.024, 0.010	

^aThe children's age when their parents answered the A-TAC questionnaire (9 or 12 years old). ^bEffect size presented as the regression coefficient (95% CI). A-TAC=Autism-Tics, ADHD, and Other Co-morbidities inventory.

Additional table 2. ASD^a case-control analyses after adjustment for age^b.

Gene	SNP	Genotype	N (case/control)	p-value ^c	OR (CI 95%)
<i>CDH 9/10</i>	rs4307059	C/C	12 / 1651	0.836	1.082 (0.593-2.174)
		T/C	37 / 5527		1.159 (0.714-1.883)
		T/T	36 / 4730		
<i>CNTNAP2</i>	rs2710102	A/A	25 / 3223	0.805	0.810 (0.421-1.559)
		A/G	44 / 5932		0.845 (0.467-1.529)
		G/G	17 / 2735		
<i>CNTNAP2</i>	rs7794745	A/A	41 / 4963	0.129	0.356 (0.129-0.979)
		T/A	40 / 5493		0.422 (0.155-1.172)
		T/T	5 / 1559		
<i>RELN</i>	rs362691	C/C+C/G	20 / 2820	0.927	1.025 (0.602-1.745)
		G/G	63 / 9076		
<i>SHANK3</i>	rs9616915	C/C	30 / 3086	0.094	0.761 (0.423-1.369)
		T/C	31 / 5808		1.369 (0.767-2.447)
		T/T	21 / 2906		

^aAbove the score 8.5 on A-TAC. ^bThe children's age when their parents answered the A-TAC questionnaire (9 or 12 years old). ^cUncorrected p-value. ASD=Autism spectrum disorder. A-TAC=Autism-Tics, ADHD, and Other Co-morbidities inventory.

Additional table 3. Association between genetic factors for neurodevelopmental problems (NDPs) and five SNPs after adjustment for age^a.

General NDP		All			Boys			Girls			
	SNP	p-value	effect size ^b	CI (95%)	p-value	effect size ^b	CI (95%)	p-value	effect size ^b	CI (95%)	
	<i>CDH 9/10</i>	rs4307059	0.961	0.001	-0.021, 0.022	0.660	0.007	-0.024, 0.037	0.811	-0.004	-0.034, 0.027
	<i>CNTNAP2</i>	rs2710102	0.479	0.008	-0.014, 0.030	0.126	0.025	-0.007, 0.058	0.643	-0.006	-0.032, 0.020
	<i>CNTNAP2</i>	rs7794745	0.591	-0.006	-0.028, 0.016	0.168	-0.023	-0.055, 0.010	0.573	0.008	-0.019, 0.034
	<i>RELN</i>	rs362691	0.553	-0.009	-0.041, 0.022	0.869	0.004	-0.040, 0.048	0.291	-0.025	-0.072, 0.022
	<i>SHANK3</i>	rs9616915	0.693	0.004	-0.017, 0.025	0.862	0.003	-0.027, 0.032	0.710	0.006	-0.025, 0.037
Impulsivity											
	<i>CDH 9/10</i>	rs4307059	0.555	0.005	-0.011, 0.021	0.572	0.006	-0.016, 0.028	0.957	0.001	-0.024, 0.025
	<i>CNTNAP2</i>	rs2710102	0.371	0.008	-0.009, 0.025	0.340	0.013	-0.013, 0.038	0.781	0.003	-0.019, 0.025
	<i>CNTNAP2</i>	rs7794745	0.601	0.004	-0.012, 0.021	0.559	0.007	-0.017, 0.031	0.930	0.001	-0.021, 0.023
	<i>RELN</i>	rs362691	0.431	-0.010	-0.033, 0.014	0.870	0.003	-0.029, 0.034	0.113	-0.030	-0.068, 0.007
	<i>SHANK3</i>	rs9616915	0.146	-0.012	-0.028, 0.004	0.065	-0.020	-0.042, 0.001	0.987	<0.001	-0.025, 0.025
Learning problems											
	<i>CDH 9/10</i>	rs4307059	0.403	-0.007	-0.023, 0.009	0.474	-0.008	-0.028, 0.013	0.708	-0.005	-0.033, 0.022
	<i>CNTNAP2</i>	rs2710102	0.793	0.002	-0.014, 0.019	0.543	-0.008	-0.032, 0.017	0.275	0.012	-0.010, 0.034
	<i>CNTNAP2</i>	rs7794745	0.496	-0.006	-0.024, 0.012	0.630	0.007	-0.023, 0.038	0.173	-0.015	-0.036, 0.007
	<i>RELN</i>	rs362691	0.936	0.001	-0.023, 0.025	0.819	-0.003	-0.033, 0.026	0.517	0.014	-0.028, 0.056
	<i>SHANK3</i>	rs9616915	0.362	0.008	-0.009, 0.024	0.298	0.011	-0.010, 0.031	0.997	<0.001	-0.028, 0.028
Tics & autism											
	<i>CDH 9/10</i>	rs4307059	0.732	0.003	-0.012, 0.017	0.702	0.004	-0.017, 0.025	0.690	0.004	-0.018, 0.026
	<i>CNTNAP2</i>	rs2710102	0.113	-0.012	-0.026, 0.003	0.21	-0.015	-0.038, 0.008	0.574	-0.003	-0.013, 0.007
	<i>CNTNAP2</i>	rs7794745	0.745	0.003	-0.013, 0.018	0.872	-0.002	-0.027, 0.023	0.742	0.002	-0.008, 0.012
	<i>RELN</i>	rs362691	0.625	0.005	-0.016, 0.026	0.710	0.006	-0.025, 0.036	0.644	0.008	-0.026, 0.042
	<i>SHANK3</i>	rs9616915	0.269	0.008	-0.006, 0.022	0.263	0.012	-0.009, 0.032	0.656	0.005	-0.017, 0.028

^aThe children's age when their parents answered the A-TAC questionnaire (9 or 12 years old). ^bEffect size presented as the regression coefficient (95% CI). A-TAC=Autism-Tics, ADHD, and Other Co-morbidities inventory.