

Supplemental Table 1: Descriptive Characteristics of Analytic COGA Subsamples

	COGA Sample			EEG Subsample			Prospective Study Subsample			MRI Subsample		
	Total	EA	AA	Total	EA	AA	Total	EA	AA	Total	EA	AA
Genotyped (N)	10365	8038	3654	8810	6644	2166	2316	1265	1051	60	37	23
Female (%)	53.1	53.0	53.1	50.5	51.0	50.1	52.3	51.5	50.6	52.6	25.0	53.3
Mean Age (SD)	35.4 (12.2)	37.4 (13.2)	34.4 (11.2)	29.4 (12.3)	32.1 (13.1)	28.9 (11.9)	17.3 (7.1)	17.7 (7.4)	17.0 (6.5)	25.3 (2.8)	25.1 (3.7)	25.5 (2.4)
Ever Drinkers	93.9	95.6	92.4	92.3	95.6	92.4	83.8	81.5	85.5	79.5	85.7	66.7
DSM-IV AD Diagnosis (%)	27.6	29.5	26.4	26.3	29.5	26.4	13.8	17.8	10.2	24.5	25.7	22.9

Note: EEG, Prospective, and MRI study participants were included in COGA's discovery GWAS sample.

Supplemental Table 2. Associations of rs12954372 with EEG coherence in theta (low and high) bands from posterior emanating inter-hemispheric and intra-hemispheric bipolar pairs within COGA

Phenotype	Frequency	Z-score	<i>p-value</i>
<i>Posterior interhemispheric coherence</i>			
P4-O2--P3-O1: Low theta	3-5 Hz	5.75	9.15E-09*
P4-O2--P3-O1: High theta	5-7 Hz	4.26	7.44E-06*
P4-O2--P3-O1: Full theta	3-7 Hz	5.12	3.06E-07*
<i>Centro-Parietal interhemispheric coherence</i>			
C4-P4--C3-P3: Low theta	3-5 Hz	3.16	7.29E-04*
C4-P4--C3-P3: High theta	5-7 Hz	2.74	4.88E-03*
C4-P4--C3-P3: Full theta	3-7 Hz	2.93	3.42E-03*
<i>Long distance frontal-parietal coherence</i>			
P8-P4--F8-F4: Low theta	3-5 Hz	2.81	6.17E-04*
P8-P4--F8-F4: High theta	5-7 Hz	2.75	3.37E-03*
P8-P4--F8-F4: Full theta	3-7 Hz	2.86	4.29E-03*
P7-P3--F7-F3: Low theta	3-5 Hz	1.93	9.22E-02
P7-P3--F7-F3: High theta	5-7 Hz	1.91	9.05E-02
P7-P3--F7-F3: Full theta	3-7 Hz	0.91	3.61E-01

*Withstands a multiple test-correction (0.05/eight coherence phenotypes).

Supplemental Table 3. Chromosome 4 variants demonstrating association with interhemispheric centro-parietal low theta EEG coherence at C4-P4--C3-P3.

SNP	Base-pair Position	Effect Allele	Minor Allele Frequency	Effect Size (Z-score)	Meta <i>p</i>-value
rs116445911	103370526	A	0.05092	5.458	4.82E-08
rs17032641	103370889	T	0.05591	-3.575	0.00035
rs6821848	103350758	T	0.05531	3.013	0.00259
rs17008528	103383107	A	0.0643	2.975	0.00293
rs76573486	103356402	T	0.0625	2.781	0.00541
rs77002140	103383843	T	0.05132	-2.703	0.00687
rs115547957	103383852	A	0.05132	2.703	0.00687