

# *Supporting information*

## **A myelin gene causative of a catatonia-depression syndrome upon aging**

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## Supporting Table I

**Case-control analysis for SNP rs2070106 in exon 4 of 2',3'-cyclic nucleotide 3'-phosphodiesterase (CNP) human gene.** No statistically significant differences were observed between schizophrenic /schizoaffective cases and controls with respect to genotypic and allelic frequencies.

<i>Case-control</i>				
	<b>Genotypes</b>			<b>P-value</b>
	<b>GG</b>	<b>GA</b>	<b>AA</b>	<b>Genotypic</b>
Controls (n=1045)	459 (43.9%)	476 (45.6%)	110 (10.5%)	0.716
Cases (n=1048)	477 (45.5%)	459 (43.8%)	112 (10.7%)	
	<b>Alleles</b>			<b>P-value</b>
	<b>G allele</b>	<b>A allele</b>		<b>Allelic</b>
Controls (2n=2090)	1394 (66.7%)	696 (33.3%)		0.622
Cases (2n=2096)	1413 (67.4%)	683 (32.6%)		

*Both cases and controls fulfilled Hardy-Weinberg equilibrium criteria (Chi-square test P=0.99 and P=0.71, respectively)*

## Supporting Table II

**Catonia-depression composite score: Descriptives and ANOVA results upon inclusion of all 3 genotypes.** The data show that heterozygous (GA) subjects have very similar composite score to GG carriers; they do not reveal an intermediate phenotype or A allele dosage-dependent effect.

### Descriptives

Composite score

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
AA	40	.3794	.86258	.13639	.1036	.6553	-1.13	1.91
GA	188	.0497	.76584	.05585	-.0605	.1599	-1.20	2.72
GG	202	.0308	.74461	.05239	-.0725	.1341	-1.20	2.44
Total	430	.0715	.77000	.03713	-.0015	.1445	-1.20	2.72

### ANOVA

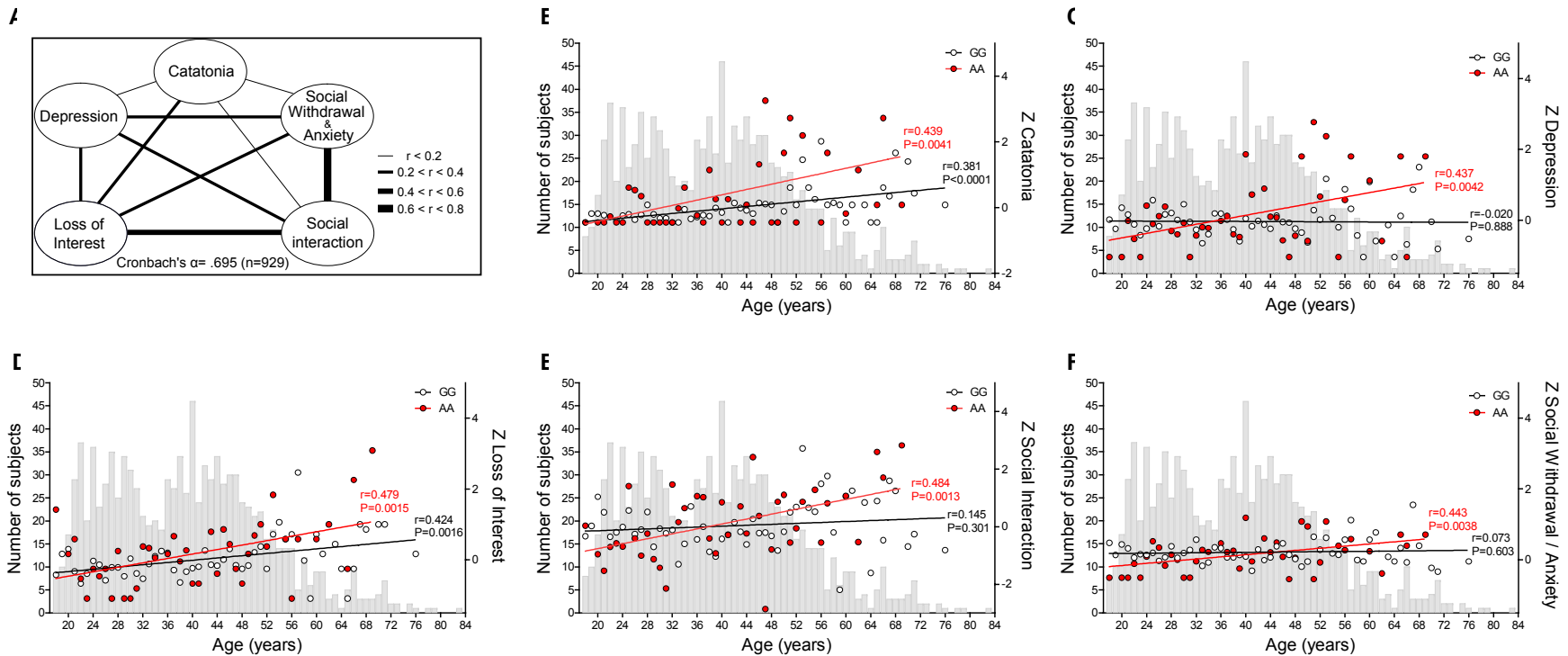
Composite score

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.217	2	2.108	3.599	.028
Within Groups	250.138	427	.586		
Total	254.355	429			

## Supporting Figure 1

### Correlation of genotypes with the catatonia-depression composite score sub-items across age groups

(A) Composite score presented for overview; (B)-(F) Grey bars in the background display the age distribution of the total GRAS sample of schizophrenic patients (n=1048). Red or white circles denote the mean values of the individual sub-item according to the respective age group and genotype (red=AA; black=GG). In most panels, the linear regression lines of the genotypes dissociate clearly after the age of 40 years. (B) Catatonia; (C) Depression; (D) Loss of interest; (E) Social interaction; (F) Social withdrawal/anxiety. Compare Figure 3C, main text.



## Supporting Videos:

1 - Catalepsy Test *Cnp*<sup>+/-</sup>

2 - Catalepsy Test Wt

A phenotype, thus far observed in mice only upon pinching or drug exposure (cannabinoids) is catatonia/catalepsy, a state of immobility where mice persist in an externally imposed abnormal posture for a prolonged time period. In the bar test, 24 months old male mice are put into a position where they have to grab a bar while standing with their hind paws on the floor. *Cnp*<sup>+/-</sup> mice persisted in this posture (Video 1), whereas Wt mice swiftly left this position (Video 2).