

**Table S3. Phenotypic information of individuals from the UK10K cohort with rare *SATB1* missense variants.** Wechsler Intelligence Scale for Children (WISC) test scores for individuals from the UK10K cohort, carrying rare *SATB1* missense variants. Standard deviation scores (std score) were calculated by comparing individual scores of carriers to the mean test scores from UK10K non-carriers. Test scores that were lower compared to mean non-carrier scores are shaded in red, while test score that were higher compared to mean non-carrier scores are shaded in green. All carrier test scores were within 2.5 standard deviations compared to the mean non-carrier scores, and thus within normal range.

	UK10K non-carriers (n=1732, $\pm$ Std)	UK10K carriers (n=9, $\pm$ Std)	UK10K carriers								
Variant	-	-	rs148337599	rs148337599	rs148337599	rs148337599	rs148337599	rs760272331	rs760272331	rs185604711	rs185604711
Residue change (SATB1 NM_001131010.4)	-	-	p.S366L	p.S366L	p.S366L	p.S366L	p.S366L	p.V519L	p.V519L	p.A573T	p.A573T
gnomAD v2.1.1 frequency			6.61e-4 (allele 282848)					8.67e-6 (allele 230660)		1.17e-4 (allele 282890)	
WISC - Verbal IQ: F@8	111.92 ( $\pm$ 16.57)	116.89 ( $\pm$ 16.07)	103	133	139	103	111	133	128	99	103
VIQ std score	-	0.30 ( $\pm$ 0.97)	-0.54	1.27	1.63	-0.54	-0.06	1.27	0.97	-0.78	-0.54
WISC - Performance IQ: F@8	103.49 ( $\pm$ 16.79)	109.00 ( $\pm$ 15.33)	104	125	115	119	109	115	90	80	124
PIQ std score	-	0.33 ( $\pm$ 0.91)	0.03	1.28	0.69	0.92	0.33	0.69	-0.80	-1.40	1.22
WISC - Total IQ: F@8	109.12 ( $\pm$ 16.00)	114.89 ( $\pm$ 14.73)	104	133	132	111	111	130	111	88	114
IQ std score	-	0.36 ( $\pm$ 0.92)	-0.32	1.49	1.43	0.12	0.12	1.30	0.12	-1.32	0.31
WISC - Verbal Comprehension Index: F@8	48.47 ( $\pm$ 11.10)	51.79 ( $\pm$ 12.51)	38	63	72	44	47	58	63	37	44
VCI std score	-	0.30 ( $\pm$ 1.13)	-0.94	1.31	2.12	-0.40	-0.13	0.86	1.31	-1.03	-0.40
WISC - Perceptual Organisation Index: F@8	41.51 ( $\pm$ 10.50)	43.80 ( $\pm$ 8.37)	41	49	50	53	44	50	30	31	47
POI std score	-	0.23 ( $\pm$ 0.80)	-0.05	0.71	0.81	1.09	0.24	0.81	-1.10	-1.00	0.52
WISC - Freedom from Distractability Index: F@8	22.17 ( $\pm$ 5.96)	24.11 ( $\pm$ 5.42)	27	26	22	22	28	35	19	20	18
FDI std score	-	0.33 ( $\pm$ 0.91)	0.81	0.64	-0.03	-0.03	0.98	2.15	-0.53	-0.36	-0.70

	$\leq -1.0$ Std score compared to UK10K non-carriers
	$\leq -0.0$ Std score compared to UK10K non-carriers
	$\geq 1.0$ Std score compared to UK10K non-carriers
	$\geq 0.0$ Std score compared to UK10K non-carriers