

## Supplementary tables 4 - 229

Supplementary table 4. Pairwise comparisons of covariates significantly different across diagnostic groups in omnibus tests

	AQP4+ NMOSD vs MG	MOGAD vs MG	AQP4+ NMOSD vs MOGAD
MoCA score	-2.64 (0.021)*	0.34 (~1)	-2.41 (0.024)*
Age at onset	1.80 (0.107)	0.00 (~1)	2.06 (0.059)
Age at testing	1.26 (0.313)	-2.25 (0.037)*	3.83 (<0.001)*
Disease duration	-0.25 (~1)	3.02 (0.004)*	3.02 (0.004)*
Proportion female	(0.040)*	(~1)	(0.060)
HADS-A score	-2.04 (0.021)*	-2.09 (0.018)*	-0.01 (0.494)
HADS-D score	-1.51 (0.198)	-2.82 (0.007)*	1.55 (0.183)
Total MFIS score	-0.98 (0.488)	-2.63 (0.013)*	2.05 (0.061)
MFIS cognitive score	-0.87 (0.192)	-2.14 (0.016)*	1.55 (0.060)

Values indicate z statistics (p values), except proportion female (p value)

Supplementary table 5. Results of univariable linear regression for  $\sqrt{101 - \% \text{ MoCA score}}$  by diagnosis

Parameter	Result
R <sup>2</sup>	0.063
RSE (DOF)	1.23 (133)
B <sub>AQP4+ NMOSD</sub> (SE; p)	0.70 (0.28, 0.013)
B <sub>MOGAD</sub> (SE; p)	0.05 (0.27, 0.853)
F statistic (DOF)	4.50 (2, 133)
P (F Statistic)	0.013
Shapiro Wilk residuals (p)	0.99 (0.261)
N outliers	0
Cook's distances	0
Levene's test (F value) (p)	1.60 (0.206)

Supplementary table 6. Results of univariable linear regression for v(101 - % MoCA score) by onset age group (<30 vs ≥30)

Parameter	Result
R <sup>2</sup>	0.025
RSE (DOF)	1.25 (131)
B (≥30 years) (SE; p)	0.455 (0.248, 0.069)
F statistic (DOF)	3.362 (1, 131)
P (F Statistic)	0.069
Shapiro Wilk residuals (p)	0.98 (0.039)
N outliers	0
Cook's distances	0
Levene's test (F value) (p)	0.357 (0.551)

Supplementary table 7. Results of univariable linear regression for v(101 - % MoCA score) by education (years)

Parameter	Result
R <sup>2</sup>	0.046
RSE (DOF)	1.21 (129 )
B (SE; p)	-0.09 (0.04; 0.014)
F statistic (DOF)	6.20 (1, 129)
P (F Statistic)	0.014
Shapiro Wilk residuals (p)	0.99 (0.703)
N outliers	0
Cook's distances	0
Heteroscedasticity	No

Supplementary table 8. Results of univariable linear regression for v(101 - % MoCA score) by first language (English vs not English)

Parameter	Result
R <sup>2</sup>	0.079
RSE (DOF)	1.21 (131)
B (SE; p)	0.86 (0.254; <0.001)
F statistic (DOF)	11.45 (1, 131)
P (F Statistic)	<0.001
Shapiro Wilk residuals (p)	0.98 (0.033)
N outliers	2
Cook's distances	0
Levene's test (F value) (p)	2.49 (0.117)

Supplementary table 9. Results of univariable linear regression for  $\sqrt{101 - \% \text{ MoCA score}}$  by HADS-A score

Parameter	Result
R <sup>2</sup>	0.038
RSE	1.17 (101)
B <sub>HADS-A</sub> (SE; p)	0.05 (0.03; 0.047)
F statistic (DOF)	4.04 (1, 101)
P (F Statistic)	0.047
Shapiro Wilk residuals (p)	0.99 (0.473)
N outliers	0
Cook's distances	0
Heteroscedasticity	No

Supplementary table 10. Results of univariable linear regression for  $\sqrt{101 - \% \text{ MoCA score}}$  by HADS-D score

Parameter	Result
R <sup>2</sup>	0.075
RSE (DOF)	1.12 (77)
B (SE; p)	0.072 (0.029; 0.015)
F statistic (DOF)	6.245 (1, 77)
P (F Statistic)	0.015
Shapiro Wilk residuals (p)	0.98 (0.371)
N outliers	0
Cook's distances	0
Heteroscedasticity	No

Supplementary table 11. Results of univariable linear regression for  $\sqrt{101 - \% \text{ MoCA score}}$  by total MFIS score

Parameter	Result
$R^2$	0.093
RSE (DOF)	1.10 (97 )
B (SE; p)	0.02 (0.005; 0.002)
F statistic (DOF)	9.96 (1, 97)
P (F Statistic)	0.002
Shapiro Wilk residuals (p)	0.99 (0.783)
N outliers	0
Cook's distances	0
Heteroscedasticity	No

Supplementary table 12. Results of univariable linear regression for  $\sqrt{101 - \% \text{ MoCA score}}$  by MFIS cognitive subscore

Parameter	Result
$R^2$	0.097
RSE (DOF)	1.11 (99)
B (SE; p)	0.03 (0.010; 0.002)
F statistic (DOF)	10.61 (1, 99)
P (F Statistic)	0.002
Shapiro Wilk residuals (p)	0.99 (0.889)
N outliers	0
Cook's distances	0
Heteroscedasticity	No



Supplementary table 13. Results of univariable linear regression for v(101 - % MoCA score) by BPI score

Parameter	Result
R <sup>2</sup>	0.250
RSE (DOF)	1.00 (92)
B (SE; p)	0.02 (0.004; <0.001)
F statistic (DOF)	30.63 (1, 92)
P (F Statistic)	<0.001
Shapiro Wilk residuals (p)	0.99 (0.874)
N outliers	1
Cook's distances	0
Heteroscedasticity	No

Supplementary table 14. Multivariable linear regression of transformed %MoCA scores, model 1

Parameter	Result
Adj R <sup>2</sup>	0.317
RSE (DOF)	0.94 (74)
F statistic (DOF)	5.281 (9, 74)
Shapiro Wilk residuals (p)	0.97 (0.029)
N outliers	2
Cook's distances	0
Heteroscedasticity	No
Maximum VIF	2.25

Supplementary table 15. Multivariable linear regression of transformed %MoCA scores, model 2

Parameter	Result
Adj R <sup>2</sup>	0.332
RSE (DOF)	0.93 (75)
F statistic (DOF)	5.644 (9, 75)
Shapiro Wilk residuals (p)	0.97 (0.085)
N outliers	2
Cook's distances	0
Heteroscedasticity	No
Maximum VIF	2.04

Supplementary table 16. Results of sequential drop1 commands applied to model 2

Round	Variable dropped	AIC (DoF)	F statistic	P (F statistic)	Statistically significant independent variables
0	N/A	-3.25 (10)	N/A	N/A	Diagnosis AQP4+ NMOSD, years of education, first language
1	HADS-A score	-4.76 (9)	0.430	0.514	Diagnosis AQP4+ NMOSD, years of education, first language
2	HADS-D score	-6.12 (8)	0.572	0.451	Diagnosis AQP4+ NMOSD, years of education, first language
3	Onset age group	-7.61 (7)	0.466	0.497	Diagnosis AQP4+ NMOSD, years of education, first language

Supplementary table 17. Multivariable linear regression of transformed %MoCA scores, model 3

Parameter	Result
Adj R <sup>2</sup>	0.345
RSE (DOF)	0.92 (78)
F statistic (DOF)	8.388 (6, 78)
Shapiro Wilk residuals (p)	0.98 (0.173)
N outliers	1
Cook's distances	0
Heteroscedasticity	No
Maximum VIF	1.33

Supplementary table 18: MICE for multivariable regression of %MoCA scores

	Trial complete data set (n = 84)	Trial imputed data set (n = 84)	Original incomplete data set (n = 89)	Imputed full data set (n = 131)
R <sup>2</sup>	0.392	0.388	0.345	0.245
$\beta_{(AQP4+ NMOSD)}$ (SE)	0.826 (0.285)	0.858 (0.286)	0.825 (0.284)	0.613 (0.261)
P <sub>(<math>\beta_{AQP4+ NMOSD}</math>)</sub>	0.005	0.004	0.005	0.020
$\beta_{(MOGAD)}$ (SE)	0.389 (0.279)	0.418 (0.283)	0.413 (0.276)	0.247 (0.247)
P <sub>(<math>\beta_{MOGAD}</math>)</sub>	0.167	0.144	0.138	0.320
F (DOF)	8.257 (6, 77)	7.985 (6, 74.94)	8.388 (6, 83)	5.711 (6, 106.99)
p (F)	<0.001	<0.001	<0.001	<0.001
RIV	N/A	0.014	N/A	0.154

Supplementary table 19. Results of univariable linear regression for  $\sqrt{101 - \% \text{ MoCA score}}$  by diagnosis (AQP4+ NMOSD and MOGAD only)

Parameter	Result
R <sup>2</sup>	0.064
RSE (DOF)	1.26 (99)
$B_{MOGAD}$ (SE; p)	-0.651 (0.251; 0.011)
F statistic (DOF)	6.715 (1, 99)
Shapiro Wilk residuals (p)	0.98 (0.246)
N outliers	0
Cook's distances	0
Levene's test (F value) (p)	2.901 (0.091)

Supplementary table 20. Results of univariable linear regression for  $\sqrt{101 - \% \text{ MoCA score}}$  by onset age group (AQP4+ NMOSD and MOGAD only)

Parameter	Result
R <sup>2</sup>	0.005
RSE (DOF)	1.30 (98)
$B_{\geq 30}$ (SE; p)	0.213 (0.309; 0.492)
F statistic (DOF)	0.476 (1, 98)
Shapiro Wilk residuals (p)	0.98 (0.099)
N outliers	0
Cook's distances	0
Levene's test (F value) (p)	1.38 (0.243)

Supplementary table 21. Results of univariable linear regression for  $v(101 - \% \text{ MoCA score})$  by age at testing (AQP4+ NMOSD and MOGAD only)

Parameter	Result
$R^2$	0.007
RSE (DOF)	1.29 (99)
B (SE; p)	0.010 (0.012; 0.401)
F statistic (DOF)	0.712
Shapiro Wilk residuals (p)	0.98 (0.276)
N outliers	0
Cook's distances	0
Heteroscedasticity	No

Supplementary table 22. Results of univariable linear regression for  $v(101 - \% \text{ MoCA score})$  by disease duration (AQP4+ NMOSD and MOGAD only)

Parameter	Result
$R^2$	0.000
RSE (DOF)	1.30 (98)
B (SE; p)	0.000 (0.002; 0.951)
F statistic (DOF)	0.004
Shapiro Wilk residuals (p)	0.98 (0.088)
N outliers	0
Cook's distances	1
Heteroscedasticity	No

Supplementary table 23. Results of univariable linear regression for  $v(101 - \% \text{ MoCA score})$  by sex at birth (AQP4+ NMOSD and MOGAD only)

Parameter	Result
$R^2$	0.008
RSE (DOF)	1.29 (99)
$B_{\text{male}}$ (SE; p)	0.269 (0.294; 0.362)
F statistic (DOF)	0.840 (1, 99)
Shapiro Wilk residuals (p)	0.98 (0.094)
N outliers	0
Cook's distances	0
Levene's test (F value) (p)	2.09 (0.152)

Supplementary table 24. Results of univariable linear regression for  $\sqrt{101 - \% \text{ MoCA score}}$  by education (AQP4+ NMOSD and MOGAD only)

Parameter	Result
R <sup>2</sup>	0.047
RSE (DOF)	1.23 (95)
B (SE; p)	-0.095 (0.044; 0.034)
F statistic (DOF)	4.634 (1, 95)
Shapiro Wilk residuals (p)	0.99 (0.524)
N outliers	0
Cook's distances	0
Heteroscedasticity	No

Supplementary table 25. Results of univariable linear regression for  $\sqrt{101 - \% \text{ MoCA score}}$  by first language (AQP4+ NMOSD and MOGAD only)

Parameter	Result
R <sup>2</sup>	0.088
RSE (DOF)	1.24 (99)
B <sub>not English</sub> (SE; p)	0.910 (0.294; 0.003)
F statistic (DOF)	9.590 (1, 99)
Shapiro Wilk residuals (p)	0.97 (0.024)
N outliers	2
Cook's distances	0
Levene's test (F value) (p)	3.081 (0.082)

Supplementary table 26. Results of univariable linear regression for  $\sqrt{101 - \% \text{ MoCA score}}$  by HADS-A score (AQP4+ NMOSD and MOGAD only)

Parameter	Result
R <sup>2</sup>	0.044
RSE (DOF)	1.16 (81)
B (SE; p)	0.054 (0.028; 0.056)
F statistic (DOF)	3.749 (1, 81)
Shapiro Wilk residuals (p)	0.98 (0.432)
N outliers	0
Cook's distances	0
Heteroscedasticity	No

Supplementary table 27. Results of univariable linear regression for  $\sqrt{101 - \% \text{ MoCA score}}$  by HADS-D score (AQP4+ NMOSD and MOGAD only)

Parameter	Result
R <sup>2</sup>	0.075
RSE (DOF)	1.12 (77)
B (SE; p)	0.072 (0.029; 0.015)
F statistic (DOF)	6.245 (1, 77)
Shapiro Wilk residuals (p)	0.98 (0.371)
N outliers	0
Cook's distances	0
Heteroscedasticity	No

Supplementary table 28. Results of univariable linear regression for  $\sqrt{101 - \% \text{ MoCA score}}$  by total MFIS score (AQP4+ NMOSD and MOGAD only)

Parameter	Result
R <sup>2</sup>	0.103
RSE (DOF)	1.11 (79)
B (SE; p)	0.016 (0.005; 0.003)
F statistic (DOF)	9.113 (1, 79)
Shapiro Wilk residuals (p)	0.99 (0.572)
N outliers	0
Cook's distances	0
Heteroscedasticity	No

Supplementary table 29. Results of univariable linear regression for  $\sqrt{101 - \% \text{ MoCA score}}$  by MFIS cognitive subscore (AQP4+ NMOSD and MOGAD only)

Parameter	Result
R <sup>2</sup>	0.088
RSE (DOF)	1.11 (80)
B (SE; p)	0.031 (0.011; 0.007)
F statistic (DOF)	7.714 (1, 80)
Shapiro Wilk residuals (p)	0.99 (0.727)
N outliers	0
Cook's distances	0
Heteroscedasticity	No

Supplementary table 30. Results of univariable linear regression for  $\sqrt{(101 - \% \text{ MoCA score})}$  by BPI score (AQP4+ NMOSD and MOGAD only)

Parameter	Result
R <sup>2</sup>	0.229
RSE (DOF)	1.03 (73)
B (SE; p)	0.019 (0.004; <0.001)
F statistic (DOF)	21.660 (1, 73)
Shapiro Wilk residuals (p)	0.99 (0.847)
N outliers	0
Cook's distances	0
Heteroscedasticity	No

Supplementary table 31. Results of univariable linear regression for  $\sqrt{(101 - \% \text{ MoCA score})}$  by EDSS score (AQP4+ NMOSD and MOGAD only)

Parameter	Result
R <sup>2</sup>	0.080
RSE (DOF)	1.26 (96)
B (SE; p)	0.184 (0.064; 0.005)
F statistic (DOF)	8.341 (1, 96)
Shapiro Wilk residuals (p)	0.99 (0.386)
N outliers	1
Cook's distances	0
Heteroscedasticity	No

Supplementary table 32. Results of univariable linear regression for  $\sqrt{(101 - \% \text{ MoCA score})}$  by SIL status (AQP4+ NMOSD and MOGAD only)

Parameter	Result
R <sup>2</sup>	0.008
RSE (DOF)	1.29 (99)
B <sub>SIL present</sub> (SE; p)	0.362 (0.413; 0.383)
F statistic (DOF)	0.769 (1, 99)
Shapiro Wilk residuals (p)	0.98 (0.371)
N outliers	0
Cook's distances	0
Levene's test (F value) (p)	1.89 (0.173)

Supplementary table 33. Multivariable linear regression of transformed % MOCA scores, model 4

Parameter	Result
Adj R <sup>2</sup>	0.232
RSE (DOF)	1.03 (55)
F statistic (DOF)	2.960 (10, 55)
Shapiro Wilk residuals (p)	0.98 (0.235)
N outliers	1
Cook's distances	0
Heteroscedasticity	No
Maximum VIF	5.88

Supplementary table 34. Results of sequential drop1 commands applied to model 4

Round	Variable dropped	AIC (DoF)	F statistic	P (F statistic)	Statistically significant independent variables
0	N/A	13.19 (11)	N/A	N/A	Nil
1	EDSS	11.25 (10)	0.046	0.832	Nil
2	Onset age group	9.31 (9)	0.048	0.825	BPI score
3	SIL status	7.41 (8)	0.086	0.770	BPI score
4	HADS-A	5.33 (7)	0.427	0.516	Education, first language
5	HADS-D	5.74 (6)	1.306	0.258	Education, first language
6	MFIS cognitive	4.033 (5)	2.698	0.106	Education, BPI score

Supplementary table 35. Multivariable linear regression of transformed %MoCA scores, model 5

Parameter	Result
Adj R <sup>2</sup>	0.277
RSE (DOF)	0.99 (61)
F statistic (DOF)	7.219 (4, 61)
Shapiro Wilk residuals (p)	0.98 (0.310)
N outliers	1
Cook's distances	0
Heteroscedasticity	No
Maximum VIF	1.33



Supplementary table 36: Multivariable regression of transformed %MoCA score against onset age group, diagnosis and onset age group\*diagnosis

a. Values of regression coefficients

Independent variable	$\beta$	T statistic	p
Onset age group	0.434 (1.626)	0.267	0.790
Diagnosis	-0.566 (0.544)	-1.040	0.300
Age at onset * diagnosis	-1.104 (0.617)	-0.169	0.866

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.038	1.27 (96)	2.295 (3, 96)	0.083	35.16

Supplementary table 37: Multivariable regression of transformed %MoCA score against onset age group, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	P
Onset age group	0.027 (0.035)	0.760	0.449
Age at testing	-0.049 (0.454)	-0.109	0.913
Age at onset * age at testing	-0.022 (0.038)	-0.583	0.561

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.019	1.31 (96)	0.383 (3, 96)	0.766	8.82

Supplementary table 38: Multivariable regression of transformed %MoCA score against onset age group, disease duration and onset age group\*disease duration

a. Values of regression coefficients

Independent variable	$\beta$	T statistic	p
Onset age group	-0.001 (0.002)	-0.502	0.617
Disease duration	0.192 (0.332)	0.579	0.564
Age at onset * duration	0.034 (0.003)	1.064	0.290

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.017	1.31 (96)	0.566 (3, 96)	0.639	2.09

Supplementary table 39: Multivariable regression of transformed %MoCA score against onset age group, education and onset age group\*education

a. Values of regression coefficients

Independent variable	$\beta$	T statistic	p
Onset age group	-0.151 (0.090)	-1.666	0.099
Education	0.006 (0.319)	0.019	0.985
Age at onset * education	0.075 (0.106)	0.712	0.478

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.054	1.24 (92)	1.736 (3, 92)	0.165	3.95

Supplementary table 40: Multivariable regression of transformed %MoCA score against onset age group, SIL status and onset age group\*SIL status

a. Values of regression coefficients

Independent variable	$\beta$	T statistic	p
Onset age group	0.356 (0.337)	1.054	0.294
SIL status	0.892 (0.717)	1.245	0.216
Age at onset * SIL status	-0.750 (0.884)	-0.849	0.398

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.009	1.30 (96)	0.700 (3, 96)	0.555	2.99

Supplementary table 41: Multivariable regression of transformed %MoCA score against SIL status, diagnosis and SIL status\*diagnosis

a. Values of regression coefficients

Independent variable	$\beta$	T statistic	p
SIL status	-1.025 (2.224)	-0.461	0.646
Diagnosis*	-0.723 (0.266)	-2.715	0.008
SIL status * diagnosis	0.551 (0.832)	0.662	0.509

\*p ≤ 0.05

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.050	1.26 (97)	2.743 (3, 97)	0.047	30.93

Supplementary table 42: Pairwise comparisons of clinical and demographic covariates across diagnoses

	AQP4+ NMOSD vs MG	MOGAD vs MG	AQP4+ NMOSD vs MOGAD
Age at testing	-0.06 (~1)	1.95 (0.153)	-1.70 (0.269)
Proportion female†	(0.167)	(~1)	(0.132)
HADS-D score	-2.02 (0.129)	0.19 (~1)	-2.22 (0.079)
Total MFIS score	-2.17 (0.090)	1.95 (0.153)	01.84 (0.196)
MFIS cognitive subscore	-1.79 (0.221)	-0.42 (~1)	-2.11 (0.104)
BPI score	-3.02 (0.007)*	-0.05 (~1)	-3.01 (0.007)*

Values indicate z statistics (p values); †Multiple Fisher's exact tests (p values only)

\*p ≤0.05

Supplementary table 43: Pairwise comparisons of Rao BRB-N and Stroop interference scores across diagnoses

	AQP4+ NMOSD vs MG	MOGAD vs MG	AQP4+ NMOSD vs MOGAD
SPART-IR	-2.29 (0.208)	0.67 (0.824)	-2.95 (0.076)
SDMT	-4.72 (0.141)	4.93 (0.051)	-9.65 (<0.001)*
PASAT	-3.23 (0.004)*	1.00 (0.954)	-4.10 (<0.001)*
Stroop interference	-4.27 (0.270)	2.45 (0.493)	-6.72 (0.045)*

Values z statistics for PASAT score and mean difference for other tests (adjusted p values)

\*p ≤0.05

Supplementary table 44. Univariable regressions of transformed SRT-LTS score

Predictor	$\beta_1$	SE	T	P	$P_{adj}$	$R^2$
Diagnosis AQP4+ NMOSD	-0.091	0.307	-0.296	0.768	0.922	0.006
Diagnosis MOGAD	-0.220	0.260	-0.845	0.400	0.600	N/A
Age at onset	0.010	0.008	1.288	0.200	N/A	0.013
Onset age group	0.130	0.236	0.550	0.583	N/A	0.002
Age at testing	0.005	0.009	0.522	0.603	N/A	0.002
Disease duration	-0.001	0.001	-1.118	0.266	N/A	0.010
Sex at birth*	0.814	0.241	3.381	0.001	N/A	0.085
Education*	-0.133	0.044	-3.044	0.003	N/A	0.072
HADS-A	0.004	0.032	0.116	0.908	N/A	0.000
HADS-D	-0.016	0.034	-0.471	0.639	N/A	0.002
Total MFIS	0.001	0.006	0.083	0.934	N/A	0.000
MFIS cognitive	-0.007	0.014	-0.503	0.616	N/A	0.003
BPI	0.002	0.005	0.318	0.751	N/A	0.001

\*p ≤0.10

Supplementary table 45. Univariable regressions of SRT-CLTR score

Predictor	$\beta_1$	SE	T	P	$P_{adj}$	$R^2$
Diagnosis AQP4+ NMOSD	0.517	3.583	0.144	0.885	0.927	0.014
Diagnosis MOGAD	3.751	3.031	1.237	0.218	0.495	N/A
Age at onset	-0.126	0.091	-1.384	0.169	N/A	0.015
Onset age group	-1.743	2.762	-0.631	0.529	N/A	0.003
Age at testing	-0.114	0.108	-1.064	0.290	N/A	0.009
Disease duration	0.006	0.013	0.439	0.661	N/A	0.002
Sex at birth*	-8.779	2.839	-3.092	0.002	N/A	0.072
Education*	1.725	0.505	3.417	0.001	N/A	0.089
HADS-A	-0.127	0.368	-0.346	0.730	N/A	0.001
HADS-D	0.173	0.398	0.434	0.665	N/A	0.002
Total MFIS	-0.012	0.075	-0.164	0.870	N/A	0.000
MFIS cognitive	0.070	0.165	0.424	0.672	N/A	0.002
BPI	0.000	0.056	-0.003	0.997	N/A	0.000

\*p ≤0.10

Supplementary table 46. Univariable regressions of transformed SRT-DR score

Predictor	$\beta_1$	SE	T	P	P <sub>adj</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD	0.156	0.165	0.944	0.347	0.568	0.008
Diagnosis MOGAD	0.013	0.138	0.092	0.927	0.927	N/A
Age at onset	0.007	0.004	1.587	0.115	N/A	0.020
Onset age group	0.141	0.126	1.117	0.266	N/A	0.010
Age at testing	0.007	0.005	1.320	0.189	N/A	0.014
Disease duration	0.000	0.001	-0.524	0.601	N/A	0.002
Sex at birth*	0.364	0.132	2.756	0.007	N/A	0.059
Education*	-0.064	0.024	-2.728	0.007	N/A	0.059
HADS-A	0.009	0.016	0.574	0.567	N/A	0.003
HADS-D	0.004	0.018	0.228	0.820	N/A	0.001
Total MFIS	0.002	0.003	0.597	0.552	N/A	0.004
MFIS cognitive	0.000	0.007	0.061	0.951	N/A	0.000
BPI	0.002	0.002	0.715	0.476	N/A	0.006

\*p ≤ 0.10

Supplementary table 47. Univariable regressions of SPART-IR score

Predictor	$\beta_1$	SE	T	P	P <sub>adj</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD*	-2.287	1.342	-1.705	0.091	0.369	0.040
Diagnosis MOGAD	0.666	1.123	0.593	0.554	0.712	N/A
Age at onset	-0.007	0.035	-0.215	0.830	N/A	0.000
Onset age group	-0.050	1.043	-0.048	0.962	N/A	0.000
Age at testing	-0.043	0.040	-1.076	0.284	N/A	0.009
Disease duration	-0.007	0.005	-1.452	0.149	N/A	0.017
Sex at birth	0.580	1.112	0.522	0.603	N/A	0.002
Education	-0.003	0.196	-0.013	0.990	N/A	0.000
HADS-A	-0.136	0.130	-1.045	0.299	N/A	0.012
HADS-D*	-0.299	0.139	-2.144	0.035	N/A	0.048
Total MFIS	-0.044	0.027	-1.638	0.105	N/A	0.028
MFIS cognitive	-0.057	0.058	-0.982	0.329	N/A	0.010
BPI*	-0.035	0.019	-1.813	0.073	N/A	0.035

\*p ≤ 0.10

Supplementary table 48. Univariable regressions of transformed SPART-DR score

Predictor	$\beta_1$	SE	T	P	P <sub>adj</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD	0.239	0.153	1.562	0.121	0.369	0.036
Diagnosis MOGAD	-0.081	0.125	-0.645	0.520	0.712	N/A
Age at onset	0.002	0.004	0.598	0.551	N/A	0.003
Onset age group	0.079	0.117	0.674	0.502	N/A	0.004
Age at testing	0.002	0.005	0.474	0.636	N/A	0.002
Disease duration	0.000	0.001	-0.101	0.920	N/A	0.000
Sex at birth	0.125	0.125	1.000	0.319	N/A	0.008
Education	0.004	0.022	0.200	0.841	N/A	0.000
HADS-A	-0.001	0.014	-0.088	0.930	N/A	0.000
HADS-D	0.004	0.015	0.237	0.813	N/A	0.001
Total MFIS	0.003	0.003	0.911	0.365	N/A	0.009
MFIS cognitive	0.005	0.006	0.797	0.427	N/A	0.007
BPI	0.002	0.002	0.694	0.489	N/A	0.005

\*p ≤0.10

Supplementary table 49. Univariable regressions of SDMT score

Predictor	$\beta_1$	SE	T	P	P <sub>adj</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD*	-4.719	2.476	-1.906	0.059	0.355	0.116
Diagnosis MOGAD*	4.927	2.084	2.365	0.020	0.177	N/A
Age at onset	-0.089	0.066	-1.350	0.180	N/A	0.015
Onset age group	-0.465	2.018	-0.230	0.818	N/A	0.000
Age at testing	-0.089	0.078	-1.141	0.256	N/A	0.011
Disease duration	0.003	0.009	0.299	0.766	N/A	0.001
Sex at birth*	-5.745	2.080	-2.762	0.007	N/A	0.060
Education*	0.875	0.387	2.263	0.025	N/A	0.042
HADS-A	-0.393	0.242	-1.622	0.108	N/A	0.028
HADS-D*	-0.810	0.245	-3.308	0.001	N/A	0.105
Total MFIS*	-0.179	0.046	-3.854	0.000	N/A	0.136
MFIS cognitive*	-0.333	0.101	-3.286	0.001	N/A	0.102
BPI*	-0.122	0.034	-3.601	0.001	N/A	0.125

\*p ≤0.10

Supplementary table 50. Univariable regressions of transformed PASAT score

Predictor	$\beta_1$	SE	T	P	P <sub>adj</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD*	1.242	0.354	3.504	0.001	0.012	0.159
Diagnosis MOGAD	-0.326	0.297	-1.097	0.275	0.495	0.159
Age at onset	-0.002	0.010	-0.181	0.857	N/A	0.000
Onset age group	-0.132	0.292	-0.452	0.652	N/A	0.002
Age at testing	-0.008	0.012	-0.731	0.466	N/A	0.005
Disease duration	-0.001	0.001	-0.513	0.609	N/A	0.002
Sex at birth	-0.073	0.316	-0.231	0.818	N/A	0.000
Education	-0.052	0.058	-0.905	0.368	N/A	0.008
HADS-A	0.054	0.037	1.469	0.145	N/A	0.024
HADS-D*	0.112	0.039	2.866	0.005	N/A	0.086
Total MFIS*	0.029	0.007	4.096	0.000	N/A	0.162
MFIS cognitive*	0.051	0.016	3.209	0.002	N/A	0.105
BPI*	0.019	0.005	3.509	0.001	N/A	0.128

\*p ≤0.10

Supplementary table 51. Univariable regressions of WLGT score

Predictor	$\beta_1$	SE	T	P	P <sub>adj</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD	-2.713	2.270	-1.195	0.234	0.495	0.013
Diagnosis MOGAD	-0.297	1.910	-0.156	0.877	0.927	0.013
Age at onset	-0.028	0.058	-0.483	0.630	N/A	0.002
Onset age group	0.561	1.751	0.321	0.749	N/A	0.001
Age at testing	0.095	0.068	1.406	0.162	N/A	0.016
Disease duration*	0.019	0.008	2.526	0.013	N/A	0.050
Sex at birth	-2.983	1.874	-1.592	0.114	N/A	0.021
Education*	0.725	0.324	2.236	0.027	N/A	0.041
HADS-A	-0.200	0.232	-0.860	0.392	N/A	0.008
HADS-D*	-0.503	0.251	-2.005	0.048	N/A	0.042
Total MFIS*	-0.097	0.047	-2.083	0.040	N/A	0.045
MFIS cognitive	-0.138	0.102	-1.354	0.179	N/A	0.019
BPI	-0.089	0.034	-2.610	0.011	N/A	0.070

\*p ≤0.10



Predictor	$\beta_1$	SE	T	P	P <sub>adj</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD	-4.275	2.747	-1.556	0.123	0.369	0.061
Diagnosis MOGAD	2.446	2.149	1.138	0.258	0.495	0.061
Age at onset*	-0.156	0.072	-2.170	0.033	N/A	0.048
Onset age group*	-4.204	2.052	-2.049	0.043	N/A	0.043
Age at testing*	-0.239	0.083	-2.871	0.005	N/A	0.081
Disease duration	-0.002	0.009	-0.245	0.807	N/A	0.001
Sex at birth	0.960	2.212	0.434	0.665	N/A	0.002
Education	0.410	0.408	1.006	0.317	N/A	0.011
HADS-A	0.065	0.274	0.236	0.814	N/A	0.001
HADS-D*	-0.573	0.304	-1.883	0.064	N/A	0.045
Total MFIS*	-0.122	0.060	-2.038	0.045	N/A	0.053
MFIS cognitive*	-0.285	0.136	-2.094	0.040	N/A	0.055
BPI	-0.054	0.046	-1.189	0.238	N/A	0.020

\*p ≤ 0.10

Supplementary table 53a & b: Multivariable regression of transformed SRT-LTS score, full model

a. Values of regression coefficients for full model

		$\beta$ (SE)	T statistic	p	P <sub>adj</sub>
Diagnosis					
	AQP4+ NMOSD	0.013 (0.291)	0.107	0.915	0.961
	MOGAD	-0.205 (0.242)	-0.845	0.400	0.866
Onset age group ≥ 30		0.112 (0.221)	0.504	0.615	N/A
Sex at birth (male)*		0.899 (0.240)	3.751	<0.001	N/A
Education*		-0.127 (0.042)	-3.027	0.003	N/A

Reference variable for diagnosis = MG  
\* p ≤ 0.05

b. Assessment of full model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	AIC (eDoF)	Max VIF
0.146	1.13 (116)	5.121	<0.001	44.81 (6)	1.03

### Supplementary table 54a & b. Multivariable regression of transformed SRT-LTS score, optimal model

#### a. Values of regression coefficients for optimal model

	$\beta$ (SE)	T statistic	p
Sex at birth*	0.880 (0.231)	3.809	<0.001
Education*	-0.131 (0.041)	-3.159	0.002

\*  $p \leq 0.05$

#### b. Assessment of optimal model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	AIC (eDoF)	Max VIF
0.159	1.16 (119)	12.41 (2, 119)	<0.001	40.03 (3)	1.00

### Supplementary table 55a & b. Multivariable regression of SRTCLTR, full model

#### a. Values of regression coefficients for full model

		$\beta$ (SE)	T statistic	p	p <sub>adj</sub>
Diagnosis					
	AQP4+ NMOSD	-0.862 (3.375)	-0.255	0.799	0.961
	MOGAD	3.691 (2.805)	1.316	0.191	0.530
Onset age group $\geq 30$		-1.471 (2.562)	-0.574	0.567	N/A
Sex at birth (male)*		-10.037 (2.776)	-3.616	<0.001	N/A
Education*		1.641 (0.456)	3.379	<0.001	N/A

Reference variable for diagnosis = MG

\*  $p \leq 0.05$

#### b. Assessment of full model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	AIC (eDoF)	Max VIF
0.161	13.59 (116)	5.630 (5, 116)	<0.001	642.51 (6)	1.03

## Supplementary table 56a & b. Multivariable regression of SRT-CLTR score, optimal model

### a. Values of regression coefficients for optimal model

	$\beta$ (SE)	T statistic	p
Sex at birth (male)*	-9.585 (2.695)	-3.557	<0.001
Education*	1.701 (0.482)	3.531	<0.001

\* p ≤ 0.05

### b. Assessment of optimal model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	AIC (eDoF)	Max VIF
0.162	13.57 (119)	12.730 (2, 119)	<0.001	639.36 (3)	1.00

## Supplementary table 57a & b. Multivariable regression of transformed SRT-DR score, full model

### a. Values of regression coefficients for full model

		$\beta$ (SE)	T statistic	p	p <sub>adj</sub>
Diagnosis					
	AQP4+ NMOSD	0.212 (0.160)	1.325	0.188	0.530
	MOGAD	0.012 (0.131)	0.089	0.929	0.961
Onset age group ≥30		0.112 (0.121)	0.927	0.356	N/A
Sex at birth (male)*		0.426 (0.133)	3.214	0.002	N/A
Education*		-0.066 (0.023)	-2.892	0.005	N/A

Reference variable for diagnosis = MG

\* p ≤ 0.05

### b. Assessment of model full model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	AIC (eDoF)	Max VIF
0.118	0.63 (114)	4.172 (5, 114)	0.002	-104.72 (6)	1.04

### Supplementary table 58a & b. Multivariable regression of transformed SRT-DR score, optimal model

#### a. Values of regression coefficients for optimal model

	$\beta$ (SE)	T statistic	p
Sex at birth (male)*	0.398 (0.128)	3.110	0.002
Education*	-0.065 (0.023)	-2.868	0.005

\* p ≤ 0.05

#### b. Assessment of optimal model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	AIC (eDoF)	Max VIF
0.116	0.63 (117)	8.831 (2, 117)	<0.001	-107.42 (3)	1.00

### Supplementary table 59a & b. Multivariable regression of SPART-IR score, full model

#### a. Values of regression coefficients for full model

		$\beta$ (SE)	T statistic	p	p <sub>adj</sub>
Diagnosis					
	AQP4+ NMOSD	-2.614 (1.695)	-1.542	0.127	0.530
	MOGAD	0.291 (1.289)	0.226	0.822	0.961
Onset age group ≥30		-0.262 (1.200)	-0.218	0.828	N/A
HADS-D score		-0.256 (0.206)	-1.241	0.218	N/A
BPI score		0.006 (0.029)	0.207	0.836	N/A

Reference variable for diagnosis = MG  
\* p ≤ 0.05

#### b. Assessment of full model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	AIC (eDoF)	Max VIF
0.029	5.39 (84)	1.536 (5, 84)	0.187	309.42 (6)	1.49

### Supplementary table 60a & b. Multivariable regression of SPART-IR score, optimal model

#### a. Values of beta regression coefficients for optimal model

	$\beta$ (SE)	T statistic	p
HADS-D score*	-0.296 (0.144)	-2.057	0.043

\*  $p \leq 0.05$

#### b. Assessment of optimal model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	AIC (eDoF)	Max VIF
0.035	5.38 (88)	4.231 (1, 88)	0.043	304.69 (2)	N/A

### Supplementary table 61a & b. Multivariable regression of transformed SPART-DR score, full model

#### a. Values of regression coefficients for full model

		$\beta$ (SE)	T statistic	p	p <sub>adj</sub>
Diagnosis					
	AQP4+ NMOSD	0.227 (0.154)	1.471	0.144	0.530
	MOGAD	-0.089 (0.126)	-0.708	0.481	0.866
Onset age group $\geq 30$		0.069 (0.117)	0.589	0.557	N/A

Reference variable for diagnosis = MG  
\*  $p \leq 0.05$

#### b. Assessment of full model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	AIC (eDoF)	Max VIF
0.014	0.61 (116)	1,579 (3, 116)	0.198	-113.43 (4)	1.01

Supplementary table 62a & b. Multivariable regression of transformed SPART-DR score, optimal model

a. Values of regression coefficients for optimal model

	$\beta$ (SE)	T statistic	p
Diagnosis			
AQP4+ NMOSD	0.239 (0.153)	1.562	0.121
MOGAD	-0.081 (0.125)	-0.645	0.520

Reference variable for diagnosis = MG  
\* p ≤ 0.05

b. Assessment of optimal model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	AIC (eDoF)	Max VIF
0.020	0.61 (117)	2.207 (2, 117)	0.115	-115.07 (3)	N/A

Supplementary table 63a & b. Multivariable regression of WLGT score, full model

a. Values of regression coefficients for full model

	$\beta$ (SE)	T statistic	p	p <sub>adj</sub>
Diagnosis				
AQP4+ NMOSD	-0.808 (3.086)	-0.262	0.794	0.961
MOGAD	1.842 (2.421)	0.761	0.449	0.866
Onset age group ≥30	3.674 (2.367)	1.552	0.125	N/A
Disease duration*	0.031 (0.010)	2.978	0.004	N/A
Education	0.451 (0.457)	0.986	0.328	N/A
HADS-D score	-0.043 (0.449)	-0.095	0.925	N/A
Total MFIS score	0 (0.087)	-0.002	0.998	N/A
BPI score	-0.052 (0.058)	-0.905	0.387	N/A

Reference variable for diagnosis = MG  
\* p ≤ 0.05

b. Assessment of full model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	AIC (eDoF)	Max VIF
0.080	9.48 (73)	1.879 (8, 73)	0.076	377.37 (9)	1.67

## Supplementary table 64a & b. Multivariable regression of WLGT score, optimal model

### a. Values of regression coefficients for optimal model

	$\beta$ (SE)	T statistic	p
Onset age group $\geq 30$	3.844 (2.297)	1.673	0.098
Disease duration*	0.029 (0.010)	2.992	0.037
BPI score*	-0.074 (0.036)	-2.058	0.043

\*  $p \leq 0.05$

### b. Assessment of optimal model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	AIC (eDoF)	Max VIF
0.116	929 (78)	5.457 (3, 78)	0.005	369.51 (4)	1.16

## Supplementary table 65a & b. Multivariable regression of Stroop interference score, full model

### a. Values of regression coefficients for full model

	$\beta$ (SE)	T statistic	p	$p_{adj}$
Diagnosis				
AQP4+ NMOSD	-1.906 (3.253)	-0.586	0.560	0.916
MOGAD	0.983 (2.753)	0.357	0.722	0.961
Onset age group $\geq 30$	-2.268 (3.230)	-0.702	0.485	N/A
Age at testing	-0.186 (0.135)	-1.383	0.171	N/A
HADS-D score	-0.091 (0.431)	-0.210	0.834	N/A
Total MFIS score	-0.089 (0.084)	-1.060	0.293	N/A

Reference variable for diagnosis = MG

\*  $p \leq 0.05$

### b. Assessment of full model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	AIC (eDoF)	Max VIF
0.086	9.74 (69)	2.171 (6, 69)	0.056	352.64 (7)	1.44

Supplementary table 66a & b. Multivariable regression of Stroop interference score, optimal model

a. Values of regression coefficients for optimal model

	$\beta$ (SE)	T statistic	p
Age at testing*	-0.267 (0.095)	-2.809	0.006
Total MFIS score	-0.106 (0.058)	-1.832	0.071

\*  $p \leq 0.05$

b. Assessment of optimal model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	AIC (eDoF)	Max VIF
0.122	5.54 (73)	6.216 (2, 73)	0.003	345.84 (3)	1.01

Supplementary table 67. Univariable regressions of transformed SRT-LTS score (NMOSD and MOGAD only)

Predictor	$\beta_1$	SE	T	P	P <sub>adj</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD	0.129	0.306	0.421	0.675	0.675	0.002
Age at onset	0.004	0.010	0.351	0.727	N/A	0.002
Onset age group	0.027	0.309	0.089	0.930	N/A	0.000
Age at testing	0.000	0.012	0.021	0.984	N/A	0.000
Disease duration	-0.001	0.002	-0.423	0.674	N/A	0.002
Sex at birth*	0.861	0.317	2.719	0.008	N/A	0.092
Education*	-0.111	0.055	-2.036	0.045	N/A	0.055
HADS-A	-0.015	0.039	-0.398	0.692	N/A	0.003
HADS-D	-0.058	0.040	-1.446	0.154	N/A	0.035
Total MFIS	-0.001	0.007	-0.074	0.941	N/A	0.000
MFIS cognitive	-0.011	0.016	-0.683	0.497	N/A	0.008
BPI	-0.002	0.006	-0.366	0.716	N/A	0.002
EDSS	-0.031	0.074	-0.412	0.681	N/A	0.002
SILs present	0.431	0.315	1.369	0.175	N/A	0.026



Supplementary table 68. Univariable regressions of SRT-CLTR score (NMOSD and MOGAD only)

Predictor	$\beta_1$	SE	T	P	P <sub>(adj)</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD	-3.234	3.623	-0.893	0.375	0.449	0.011
Age at onset	-0.099	0.123	-0.808	0.421	N/A	0.009
Onset age group	-1.897	3.668	-0.517	0.607	N/A	0.004
Age at testing	-0.062	0.141	-0.438	0.663	N/A	0.003
Disease duration	0.013	0.020	0.634	0.528	N/A	0.005
Sex at birth*	-9.759	3.786	-2.578	0.012	N/A	0.083
Education*	1.643	0.636	2.584	0.012	N/A	0.086
HADS-A	0.021	0.455	0.047	0.963	N/A	0.000
HADS-D	0.415	0.478	0.869	0.389	N/A	0.013
Total MFIS	-0.018	0.086	-0.207	0.837	N/A	0.001
MFIS cognitive	0.084	0.189	0.443	0.659	N/A	0.003
BPI	0.012	0.067	0.181	0.857	N/A	0.001
EDSS	-0.277	0.876	-0.316	0.753	N/A	0.001
SILs present	-4.603	3.762	-1.224	0.225	N/A	0.021

Supplementary table 69. Univariable regressions of transformed SRT-DR score (NMOSD and MOGAD only)

Predictor	$\beta_1$	SE	T	P	P <sub>(adj)</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD	0.143	0.169	0.848	0.399	0.449	0.010
Age at onset	0.005	0.006	0.928	0.357	N/A	0.012
Onset age group	0.134	0.171	0.788	0.433	N/A	0.009
Age at testing	0.003	0.007	0.513	0.609	N/A	0.004
Disease duration	-0.001	0.001	-0.718	0.475	N/A	0.007
Sex at birth*	0.515	0.175	2.934	0.004	N/A	0.107
Education*	-0.077	0.029	-2.611	0.011	N/A	0.089
HADS-A	-0.007	0.020	-0.332	0.741	N/A	0.002
HADS-D	-0.015	0.021	-0.690	0.493	N/A	0.008
Total MFIS	0.001	0.004	0.195	0.846	N/A	0.001
MFIS cognitive	-0.003	0.008	-0.308	0.759	N/A	0.002
BPI	0.000	0.003	0.040	0.969	N/A	0.000
EDSS	0.016	0.041	0.386	0.701	N/A	0.002
SILs present	0.079	0.178	0.441	0.660	N/A	0.003

Supplementary table 70. Univariable regressions of SPART-IR score (NMOSD and MOGAD only)

Predictor	$\beta_1$	SE	T	P	P <sub>(adj)</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD*	-2.934	1.358	-2.174	0.033	0.059	0.061
Age at onset	0.004	0.048	0.092	0.927	N/A	0.000
Onset age group	0.375	1.415	0.265	0.792	N/A	0.001
Age at testing	-0.018	0.054	-0.324	0.747	N/A	0.001
Disease duration	-0.007	0.008	-0.867	0.369	N/A	0.010
Sex at birth	-0.148	1.507	-0.098	0.922	N/A	0.000
Education	-0.060	0.251	-0.235	0.815	N/A	0.001
HADS-A	-0.089	0.161	-0.552	0.583	N/A	0.005
HADS-D	-0.191	0.167	-1.141	0.259	N/A	0.022
Total MFIS	-0.023	0.032	-0.729	0.469	N/A	0.009
MFIS cognitive	-0.032	0.067	-0.475	0.636	N/A	0.004
BPI	-0.016	0.023	-0.672	0.505	N/A	0.008
EDSS	-0.542	0.334	-1.623	0.109	N/A	0.036
SILs present	-0.133	1.456	-0.091	0.928	N/A	0.000

Supplementary table 71. Univariable regressions of transformed SPART-DR score (NMOSD and MOGAD only)

Predictor	$\beta_1$	SE	T	P	P <sub>(adj)</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD*	0.319	0.160	2.001	0.049	0.059	0.049
Age at onset	-0.001	0.006	-1.131	0.896	N/A	0.000
Onset age group	0.043	0.166	0.257	0.798	N/A	0.001
Age at testing	-0.004	0.006	-0.590	0.557	N/A	0.005
Disease duration	0.000	0.001	-0.509	0.612	N/A	0.004
Sex at birth*	0.332	0.171	1.946	0.056	N/A	0.051
Education	-0.007	0.029	-0.234	0.815	N/A	0.001
HADS-A	-0.004	0.018	-0.217	0.829	N/A	0.001
HADS-D	0.002	0.019	0.088	0.930	N/A	0.000
Total MFIS	0.003	0.004	0.712	0.479	N/A	0.009
MFIS cognitive	0.005	0.007	0.736	0.465	N/A	0.009
BPI	0.000	0.003	-0.105	0.917	N/A	0.000
EDSS	0.030	0.038	0.774	0.441	N/A	0.009
SILs present	-0.001	0.170	-0.039	0.969	N/A	0.000

Supplementary table 72. Univariable regressions of SDMT score (NMOSD and MOGAD only)

Predictor	$\beta_1$	SE	T	P	P <sub>(adj)</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD*	-9.646	2.609	-3.698	<0.001	0.005	0.162
Age at onset	-0.057	0.096	-0.594	0.554	N/A	0.005
Onset age group	0.924	2.873	0.322	0.749	N/A	0.001
Age at testing	-0.080	0.110	-0.732	0.466	N/A	0.007
Disease duration	-0.004	0.016	-0.289	0.773	N/A	0.001
Sex at birth*	-6.294	3.018	-2.086	0.041	N/A	0.058
Education	0.860	0.533	1.615	0.111	N/A	0.036
HADS-A	-0.468	0.326	-1.436	0.157	N/A	0.035
HADS-D*	-0.992	0.322	-3.075	0.003	N/A	0.142
Total MFIS*	-0.211	0.059	-3.599	<0.001	N/A	0.185
MFIS cognitive*	-0.407	0.126	-3.226	0.002	N/A	0.152
BPI*	-0.141	0.045	-3.148	0.003	N/A	0.153
EDSS*	-2.278	0.638	-3.729	<0.001	N/A	0.168
SILs present	-1.900	3.000	-0.633	0.529	N/A	0.006

Supplementary table 73. Univariable regressions of transformed PASAT score (NMOSD and MOGAD only)

Predictor	$\beta_1$	SE	T	P	P <sub>(adj)</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD*	1.567	0.313	5.012	<0.001	0.005	0.273
Age at onset	0.003	0.012	0.263	0.794	N/A	0.001
Onset age group	-0.119	0.363	-0.328	0.744	N/A	0.002
Age at testing	0.005	0.014	0.337	0.737	N/A	0.002
Disease duration	0.000	0.002	0.216	0.829	N/A	0.001
Sex at birth	0.017	0.405	0.041	0.967	N/A	0.000
Education*	-0.113	0.067	-1.688	0.096	N/A	0.041
HADS-A	0.050	0.043	1.165	0.249	N/A	0.025
HADS-D*	0.108	0.044	2.439	0.018	N/A	0.099
Total MFIS*	0.023	0.008	2.845	0.006	N/A	0.130
MFIS cognitive*	0.036	0.018	2.043	0.046	N/A	0.071
BPI*	0.018	0.006	3.022	0.004	N/A	0.149
EDSS*	0.251	0.082	3.045	0.003	N/A	0.125
SILs present	0.183	0.387	0.472	0.638	N/A	0.003

Supplementary table 74. Univariable regressions of WLGT score (NMOSD and MOGAD only)

Predictor	$\beta_1$	SE	T	P	P <sub>(adj)</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD	-2.416	2.094	-1.154	0.252	0.378	0.018
Age at onset	0.081	0.070	1.148	0.255	N/A	0.018
Onset age group	2.589	2.132	1.214	0.229	N/A	0.020
Age at testing	0.131	0.081	1.623	0.109	N/A	0.036
Disease duration	0.004	0.011	0.347	0.729	N/A	0.002
Sex at birth	-3.063	2.320	-1.320	0.191	N/A	0.024
Education*	1.032	0.360	2.868	0.005	N/A	0.106
HADS-A	-0.407	0.251	-1.620	0.111	N/A	0.044
HADS-D*	-0.498	0.273	-1.819	0.074	N/A	0.055
Total MFIS	-0.084	0.049	-1.699	0.095	N/A	0.048
MFIS cognitive	-0.167	0.105	-1.587	0.118	N/A	0.042
BPI	-0.061	0.038	-1.626	0.110	N/A	0.046
EDSS	-0.254	0.519	-0.489	0.626	N/A	0.003
SILs present	0.001	2.091	0.000	~1	N/A	0.000

Supplementary table 75. Univariable regressions of Stroop interference score (NMOSD and MOGAD only)

Predictor	$\beta_1$	SE	T	P	P <sub>(adj)</sub>	R <sup>2</sup>
Diagnosis AQP4+ NMOSD*	-6.721	2.747	-2.446	0.018	0.054	0.102
Age at onset	-0.084	0.104	-0.807	0.423	N/A	0.012
Onset age group	-1.435	2.942	-0.488	0.628	N/A	0.004
Age at testing	-0.189	0.114	-1.664	0.102	N/A	0.050
Disease duration	-0.016	0.014	-1.152	0.255	N/A	0.024
Sex at birth	1.785	3.065	0.523	0.563	N/A	0.006
Education	0.864	0.552	1.566	0.124	N/A	0.046
HADS-A	-0.145	0.339	-0.427	0.671	N/A	0.004
HADS-D*	-0.809	0.369	-2.190	0.034	N/A	0.098
Total MFIS*	-0.136	0.074	-1.835	0.074	N/A	0.073
MFIS cognitive	-0.211	0.170	-1.242	0.221	N/A	0.034
BPI	-0.085	0.056	-1.522	0.136	N/A	0.053
EDSS*	-2.075	0.630	-3.292	0.002	N/A	0.170
SILs present	3.207	2.988	1.073	0.288	N/A	0.022

Supplementary table 76. Multivariable regression of transformed SRT-LTS (AQP4+ NMOSD and MOGAD only)

a. Values of regression coefficients

	$\beta$ (SE)	T statistic	p	$p_{adj}$
Diagnosis AQP4+ NMOSD	0.249 (0.300)	0.834	0.407	0.457
Onset age group	0.269 (0.309)	0.871	0.387	N/A
Sex at birth*	0.885 (0.328)	2.700	0.009	N/A
Education	-0.106 (0.053)	-1.992	0.051	N/A
SILs present	0.287 (0.322)	0.890	0.377	N/A

Reference variable for diagnosis =  
MOGAD  
\*Unadjusted  $p \leq 0.05$

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.103	1.17 (65)	2.607 (5, 65)	0.033	1.15

Supplementary table 77. Multivariable regression of SRT-CLTR (AQP4+ NMOSD and MOGAD only)

a. Values of regression coefficients

	$\beta$ (SE)	T statistic	p	$p_{adj}$
Diagnosis AQP4+ NMOSD	-5.081 (3.408)	-1.491	0.141	0.212
Onset age group $\geq 30$	-4.711 (3.521)	-1.338	0.186	N/A
Sex at birth*	-11.010 (3.742)	-2.942	0.005	N/A
Education*	1.607 (0.607)	2.646	0.010	N/A
SILs present	-3.541 (3.678)	-0.963	0.339	N/A

Reference variable for diagnosis =  
MOGAD  
\*Unadjusted  $p \leq 0.05$

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.164	13.35 (65)	3.759 (5, 65)	0.005	1.15

Supplementary table 78. Multivariable regression of transformed SRT-DR (AQP4+ NMOSD and MOGAD only)

a. Values of regression coefficients

	$\beta$ (SE)	T statistic	p	$p_{adj}$
Diagnosis AQP4+ NMOSD	0.267 (0.159)	1.678	0.098	0.176
Onset age group $\geq 30$	0.191 (0.161)	1.186	0.240	N/A
Sex at birth*	0.608 (0.175)	3.481	<0.001	N/A
Education*	-0.080 (0.028)	-2.893	0.005	N/A
SILs present	-0.014 (0.166)	-0.087	0.931	N/A

Reference variable for diagnosis =  
MOGAD  
\*Unadjusted  $p \leq 0.05$

b. Assessment of model

Adj $R^2$	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.188	0.61 (64)	4.194 (5, 64)	0.002	1.16

Supplementary table 79. Multivariable regression of SPART-IR (AQP4+ NMOSD and MOGAD only)

a. Values of regression coefficients

	$\beta$ (SE)	T statistic	p	$p_{adj}$
Diagnosis AQP4+ NMOSD*	-3.336 (1.358)	-2.457	0.017	0.038
Onset age group $\geq 30$	0.676 91.454)	0.465	0.643	N/A
SILs present	-0.102 (1.505)	-0.068	0.946	N/A

Reference variable for diagnosis =  
MOGAD  
\*Unadjusted  $p \leq 0.05$

b. Assessment of model

Adj $R^2$	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.045	5.52 (68)	2.104 (3, 68)	0.108	1.13

Supplementary table 80. Multivariable regression of transformed SPART-DR (AQP4+ NMOSD and MOGAD only)

a. Values of regression coefficients

	$\beta$ (SE)	T statistic	p	p <sub>adj</sub>
Diagnosis AQP4+ NMOSD*	0.470 (0.162)	2.904	0.005	0.032
Onset age group $\geq 30$	-0.018 (0.166)	-0.107	0.915	N/A
Sex at birth*	0.444 (0.176)	2.516	0.014	N/A
SILs present	-0.023 (0.172)	-0.132	0.895	N/A

Reference variable for diagnosis = MOGAD

\*Unadjusted p  $\leq 0.05$

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.099	0.61 (65)	2.892 (4, 65)	0.029	1.15

Supplementary table 81. Multivariable regression of SDMT (AQP4+ NMOSD and MOGAD only)

a. Values of regression coefficients

	$\beta$ (SE)	T statistic	p	p <sub>adj</sub>
Diagnosis AQP4+ NMOSD*	-8.901 (3.131)	-2.843	0.007	0.032
Onset age group $\geq 30$	0.692 (3.114)	0.222	0.825	N/A
Sex at birth*	-10.239 (3.360)	-3.047	0.004	N/A
HADS-D	-0.176 (0.610)	-0.288	0.775	N/A
Total MFIS	-0.174 (0.115)	-1.514	0.137	N/A
BPI	0.029 (0.082)	0.357	0.723	N/A
EDSS	-1.037 (0.901)	-1.151	0.256	N/A
SILs present	0.933 (3.193)	0.292	0.771	N/A

Reference variable for diagnosis = MOGAD

\*Unadjusted p  $\leq 0.05$

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.335	9.60 (44)	4.273 (8, 44)	<0.001	3.92

Supplementary table 82. Multivariable regression of transformed PASAT (AQP4+ NMOSD and MOGAD only)

a. Values of regression coefficients

	$\beta$ (SE)	T statistic	p	p <sub>adj</sub>
Diagnosis AQP4+ NMOSD*	1.179 (0.448)	2.631	0.012	0.036
Onset age group $\geq 30$	-0.117 (0.442)	-0.264	0.793	N/A
Education	-0.118 (0.084)	-1.405	0.168	N/A
HADS-D	-0.052 (0.089)	-0.585	0.562	N/A
Total MFIS	0.015 (0.016)	0.887	0.380	N/A
BPI	0.002 (0.012)	0.165	0.870	N/A
EDSS	0.127 (0.129)	0.987	0.329	N/A
SILs present	0.405 (0.453)	0.894	0.376	N/A

Reference variable for diagnosis = MOGAD

\*Unadjusted p  $\leq 0.05$

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.223	1.34 (41)	2.760 (8, 41)	0.015	3.96

Supplementary table 83. Multivariable regression of WLGT (AQP4+ NMOSD and MOGAD only)

a. Values of regression coefficients

	$\beta$ (SE)	T statistic	p	p <sub>adj</sub>
Diagnosis AQP4+ NMOSD	-1.742 (2.323)	-0.750	0.457	0.457
Onset age group $\geq 30$	1.168 (2.297)	0.509	0.613	N/A
Education*	-.987 (0.450)	2.196	0.033	N/A
HADS-D	-0.136 (0.286)	-0.477	0.636	N/A
SILs present	1.336 (2.320)	0.576	0.567	N/A

Reference variable for diagnosis = MOGAD

\*Unadjusted p  $\leq 0.05$

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.055	7.81 (51)	0.140 (5, 51)	0.163	1.29



Supplementary table 84. Multivariable regression of Stroop interference (AQP4+ NMOSD and MOGAD only)

a. Values of regression coefficients

	$\beta$ (SE)	T statistic	p	$p_{adj}$
Diagnosis AQP4+ NMOSD	-3.880 (3.429)	-1.132	0.265	0.341
Onset age group $\geq 30$	1.243 (3.718)	0.034	0.740	N/A
Total MFIS	-0.0736(0.086)	-0.892	0.378	N/A
EDSS	-1.087 (1.008)	-1.078	0.288	N/A
SILs present	3.877 (3.689)	1.057	0.297	N/A

Reference variable for diagnosis = MOGAD

\*Unadjusted  $p \leq 0.05$

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.055	9.91 (38)	1.497 (5, 38)	0.214	1.42

Supplementary table 85. Univariable regression of test scores against age at onset as a continuous variable (AQP4+ NMOSD and MOGAD)

Test	$B_{age}$ (SE)	T statistic	P	F	R <sup>2</sup>
Transformed SRT-LTS	0.004 (0.010)	0.351	0.727	0.123 (1, 73)	0.002
SRT-CLTR	-0.099 (0.123)	-0.808	0.421	0.653 (1, 73)	0.009
Transformed SRT-DR	0.005 (0.006)	0.928	0.357	0.860 (1, 72)	0.012
SPART-IR	0.004 (0.048)	0.092	0.927	0.008 (1, 72)	0.000
Transformed SPART-DR	-0.001 (0.006)	-0.131	0.896	0.017 (1, 70)	0.000
SDMT	-0.057 (0.096)	-0.594	0.554	0.353 (1, 71)	0.005
Transformed PASAT	0.003 (0.012)	0.263	0.794	0.069 (1, 67)	0.001
WLGT	0.081 (0.070)	1.148	0.255	1.318 (1, 71)	0.018
Stroop interference	-0.084 (0.104)	-0.807	0.423	0.651 (1, 53)	0.012

Supplementary table 86. Multivariable regression of transformed SRT-LTS score against onset age group, diagnosis and onset age group\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Diagnosis AQP4+ NMOSD	0.52 (0.517)	1.006	0.318
Onset $\geq$ 30	0.257 (0.392)	0.655	0.515
Onset age group * diagnosis	-0.606 (0.644)	-0.940	0.350

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.027	1.28 (71)	0.357 (3, 71)	0.785	3.32

\*\*p  $\leq$  0.05

Supplementary table 87. Multivariable regression of transformed SRT-LTS score against onset age group, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Age at testing	-0.042 (0.035)	-1.206	0.232
Onset $\geq$ 30 years	0.438 (0.510)	0.858	0.394
Onset age group * age at testing	0.052 (0.039)	1.332	0.187

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.017	1.28 (71)	0.025 (3, 71)	0.620	8.46

\*\*p  $\leq$  0.05

Supplementary table 88. Multivariable regression of transformed SRT-LTS score against onset age group, disease duration and onset age group\*duration

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Disease duration	0.002 (0.003)	1.901	0.370
Onset $\geq$ 30 years	0.05 (0.336)	0.150	0.881
Onset age group * disease duration	-0.006 (0.004)	-1.636	0.106

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.002	1.27 (71)	0.954 (3, 71)	0.419	2.51

\*\*p  $\leq$  0.05

Supplementary table 89. Multivariable regression of transformed SRT-LTS score against onset age group, HADS-A score and onset age group\*HADS-A score

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
HADS-A score	-0.023 (0.069)	-0.329	0.743
Onset $\geq$ 30	-0.093 (0.881)	-0.105	0.916
Onset age group* HADS-A score	0.014 (0.088)	0.157	0.876

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.003	1.36 (56)	0.061 (3, 56)	0.980	5.28

\*\*p  $\leq$  0.05

Supplementary table 90. Multivariable regression of transformed SRT-LTS score against onset age group, presence of SILs and onset age group\*SILs

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	0.289 (0.496)	0.582	0.562
Onset $\geq$ 30	0.052 (0.417)	0.125	0.901
Onset age group * SIL status	0.413 (0.681)	0.606	0.547

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.006	1.26 (69)	0.867 (3, 69)	0.462	2.44

\*\*p  $\leq$  0.05

Supplementary table 91. Multivariable regression of SRT-CLTR against onset age group, diagnosis and onset age group\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Diagnosis AQP4+ NMOSD	-8.525 (6.095)	-1.339	0.166
Onset $\geq$ 30	-5.031 (4.629)	-1.087	0.281
Onset age group * diagnosis	8.108 (7.559)	1.067	0.290

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.010	15.12 (71)	0.774	0.529	3.32

\*\*p  $\leq$  0.05

Supplementary table 92. Multivariable regression of SRT-CLTR score against onset age group, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Age at testing	0.526 (0.410)	1.281	0.204
Onset $\geq$ 30	-6.797 (6.035)	-1.126	0.264
Onset age group* age at testing	-0.698 (0.462)	-1.509	0.136

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.006	15.09 (71)	0.854 (3, 71)	0.461	8.46

\*\*p  $\leq$  0.05

Supplementary table 93. Multivariable regression of SRT-CLTR score against onset age group, disease duration and onset age group\*duration

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Disease duration	-0.022 (0.031)	-0.699	0.487
Onset $\geq$ 30	-1.967 (4.011)	-0.490	0.625
Onset age group* disease duration	0.060 (0.042)	1.402	0.165

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.007	15.10 (71)	0.819 (3, 71)	0.488	2.50

\*\*p  $\leq$  0.05

Supplementary table 94. Multivariable regression of SRT-CLTR score against onset age group, HADS-A score and onset age group\*HADS-A score

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
HADS-A score	0.038 (0.809)	0.046	0.963
Onset $\geq 30$	-1.403 (10.311)	-0.136	0.892
Onset age group * HADS-A score	-0.264 (1.027)	-0.258	0.798

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.041	15.93 (56)	0.221 (3, 56)	0.882	5.28

\*\*p  $\leq 0.05$

Supplementary table 95. Multivariable regression of SRT-CLTR score against onset age group, presence of SILs and onset age group\*SILs

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	-2.143 (5.877)	-0.365	0.717
Onset $\geq 30$	-1.237 (4.947)	-0.250	0.803
Onset age group * SIL status	-7.454 (8.076)	-0.923	0.359

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.006	14.94 (3, 69)	1.137	0.340	2.44

\*\*p  $\leq 0.05$

Supplementary table 96. Multivariable regression of transformed SRT-DR against onset age group, diagnosis and onset age group\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Diagnosis AQP4+ NMOSD	0.414 (0.289)	1.431	0.157
Onset $\geq$ 30	0.282 (0.213)	1.324	0.190
Onset age group * diagnosis	-0.408 (0.357)	-1.145	0.256

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.005	0.69 (70)	0.889 (3, 70)	0.451	3.45

\*\*p  $\leq$  0.05

Supplementary table 97. Multivariable regression of transformed SRT-DR score against onset age group, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Age at testing	-0.027 (0.019)	-1.435	0.156
Onset $\geq$ 30	0.394 (0.277)	1.423	0.159
Onset age group * age at testing	0.034 (0.022)	1.611	0.112

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.044	0.692	1.074 (3, 70)	0.366	8.43

\*\*p  $\leq$  0.05

Supplementary table 98. Multivariable regression of transformed SRT-DR score against onset age group, disease duration and onset age group\*duration

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Disease duration	0.002 (0.001)	1.120	0.267
Onset $\geq$ 30	0.156 (0.185)	0.843	0.402
Onset age group * disease duration	-0.004 (0.002)	-1.962	0.054

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.023	0.685 (70)	1.565 (3, 70)	0.206	2.52

\*\*p  $\leq$  0.05

Supplementary table 99. Multivariable regression of transformed SRT-DR score against onset age group, HADS-A score and onset age group\*HADS-A score

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
HADS-A score	-0.022 (0.036)	-0.611	0.544
Onset $\geq$ 30	-0.188 (0.453)	-0.415	0.679
Onset age group * HADS-A score	0.028 (0.045)	0.627	0.533

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.043	0.70 (56)	0.195 (3, 56)	0.899	5.28

\*\*p  $\leq$  0.05



Supplementary table 100. Multivariable regression of transformed SRT-DR score against onset age group, presence of SILs and onset age group\*SILs

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	0.226 (0.281)	0.805	0.424
Onset $\geq$ 30	0.229 (0.232)	0.986	0.328
Onset age group * SIL status	-0.164 (0.383)	-0.427	0.671

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.026	0.70 (68)	0.404 (3, 68)	0.751	2.45

\*\*p  $\leq$  0.05

Supplementary table 101. Multivariable regression of SPART-IR against onset age group, diagnosis and onset age group\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Diagnosis AQP4+ NMOSD**	-4.729 (2.342)	-2.020	0.047
Onset $\geq$ 30	-0.625 (1.721)	-0.363	0.718
Onset age group * diagnosis	2.703 (2.886)	0.937	0.352

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.034	5.62 (70)	1.865 (3, 70)	0.144	3.45

\*\*p  $\leq$  0.05

Supplementary table 102. Multivariable regression of SPART-IR score against onset age group, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Age at testing	-0.073 (0.158)	-0.462	0.645
Onset $\geq$ 30	1.441 (2.334)	0.618	0.539
Onset age group * age at testing	0.032 (0.178)	0.181	0.857

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.035	5.82 (70)	0.177 (3, 70)	0.912	8.35

\*\*p  $\leq$  0.05

Supplementary table 103. Multivariable regression of SPART-IR score against onset age group, disease duration and onset age group\*disease duration

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Disease duration	-0.021 (0.012)	-1.727	0.089
Onset $\geq$ 30	-0.405 (1.524)	-0.266	0.791
Onset age group * disease duration	0.026 (0.016)	1.587	0.117

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.004	5.71 (70)	1.093 (3, 70)	0.358	2.50

\*\*p  $\leq$  0.05

Supplementary table 104. Multivariable regression of SPART-IR score against onset age group, HADS-A score and onset age group\*HADS-A score

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
HADS-A score	-0.298 (0.297)	-1.001	0.321
Onset $\geq$ 30	-3.114 (3.830)	-0.813	0.420
Onset age group * HADS-A score	0.306 (0.372)	0.822	0.415

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.036	5.63 (55)	0.336 (3, 55)	0.800	5.60

\*\*p  $\leq$  0.05

Supplementary table 105. Multivariable regression of SPART-IR score against onset age group, presence of SILs and onset age group\*SILs

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	-0.430 (2.305)	-0.186	0.853
Onset $\geq$ 30	0.364 (1.907)	0.191	0.849
Onset age group * SIL status	1.038 (3.142)	0.330	0.742

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.039	5.758 (68)	0.120 (3, 68)	0.948	2.45

\*\*p  $\leq$  0.05

Supplementary table 106. Multivariable regression of transformed SPART-DR score against onset age group, diagnosis and onset age group\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Diagnosis AQP4+ NMOSD**	0.603 (0.291)	2.074	0.042
Onset $\geq 30$	0.159 (0.196)	0.810	0.421
Onset age group * diagnosis	-0.409 (0.349)	-1.175	0.244

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.032	0.64 (68)	1.794 (3, 68)	0.157	3.84

\*\*p  $\leq 0.05$

Supplementary table 107. Multivariable regression of transformed SPART-DR score against onset age group, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Age at testing	-0.019 (0.018)	-1.046	0.299
Onset $\geq 30$	0.282 (0.265)	1.063	0.292
Onset age group * age at testing	0.014 (0.014)	0.672	0.504

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.022	0.66 (68)	0.493 (3, 68)	0.688	8.20

\*\*p  $\leq 0.05$

Supplementary table 108. Multivariable regression of transformed SPART-DR score against onset age group, disease duration and onset age group\*disease duration

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Disease duration	0.001 (0.001)	0.467	0.642
Onset $\geq$ 30	0.039 (0.181)	0.818	0.831
Onset age group * disease duration	-0.002 (0.002)	0.002	0.298

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.024	0.66 (68)	0.454 (3, 68)	0.715	2.50

\*\*p  $\leq$  0.05

Supplementary table 109. Multivariable regression of transformed SPART-DR score against onset age group, HADS-A score and onset age group\*HADS-A score

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
HADS-A score	0.018 (0.034)	0.523	0.603
Onset $\geq$ 30	0.311 (0.430)	0.723	0.473
Onset age group * HADS-A score	-0.032 (0.042)	-0.766	0.447

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.043	0.63 (54)	0.214 (3, 54)	0.886	5.43

\*\*p  $\leq$  0.05

Supplementary table 110. Multivariable regression of transformed SPART-DR score against onset age group, presence of SILs and onset age group\*SILs

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	0.269 (0.273)	0.985	0.328
Onset $\geq$ 30	0.196 (0.224)	0.875	0.385
Onset age group * SIL status	-0.484 (0.365)	-1.327	0.189

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.018	0.653 (66)	0.584 (3, 66)	0.624	2.56

\*\*p  $\leq$  0.05

Supplementary table 111. Multivariable regression of SDMT score against onset age group, diagnosis and onset age group\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Diagnosis AQP4+ NMOSD**	-15.125 (4.443)	-3.412	0.001
Onset $\geq$ 30	-2.125 (3.275)	-0.649	0.519
Onset age group *diagnosis	8.360 (5.474)	1.527	0.131

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.155	10.64 (69)	5.401 (3, 69)	0.002	3.45

\*\*p  $\leq$  0.05

Supplementary table 112. Multivariable regression of SDMT score against onset age group, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Age at testing	0.346 (0.309)	1.117	0.268
Onset $\geq$ 30	-0.804 (4.582)	-0.175	0.861
Onset age group * age at testing	-0.687 (0.350)	-1.962	0.054

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.036	11.37 (69)	1.891 (3, 69)	0.139	8.28

\*\*p  $\leq$  0.05

Supplementary table 113. Multivariable regression of SDMT score against onset age group, disease duration and onset age group\*disease duration

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Disease duration	-0.009 (0.025)	-0.344	0.732
Onset $\geq$ 30	0.589 (3.156)	0.187	0.852
Onset age group * disease duration	0.010 (0.034)	0.301	0.764

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.040	11.80 (69)	0.075 (3, 69)	0.973	2.47

\*\*p  $\leq$  0.05

Supplementary table 114. Multivariable regression of SDMT score against onset age group, HADS-A score and onset age group\*HADS-A score

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
HADS-A score	0.143 (0.596)	0.240	0.811
Onset $\geq$ 30	8.777 (7.675)	1.144	0.258
Onset age group * HADS-A score	-0.949 (0.746)	-1.272	0.209

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.011	11.28 (55)	1.222 (3, 55)	0.310	5.60

\*\*p  $\leq$  0.05

Supplementary table 115. Multivariable regression of SDMT score against onset age group, presence of SILs and onset age group\*SILs

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	-5.263 (4.709)	-1.118	0.268
Onset $\geq$ 30	-1.768 (3.908)	-0.452	0.652
Onset age group * SIL status	6.725 (6.426)	1.047	0.299

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.021	11.76 (67)	0.515 (3, 67)	0.673	2.43

\*\*p  $\leq$  0.05



Supplementary table 116. Multivariable regression of transformed PASAT score against onset age group, diagnosis and onset age group\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Diagnosis AQP4+ NMOSD**	1.576 (0.523)	3.013	0.004
Onset $\geq$ 30	-0.083 (0.391)	-0.213	0.832
Onset age group *diagnosis	-0.016 (0.658)	-0.025	0.980

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.240	1.26 (65)	8.162 (3, 65)	<0.001	3.23

\*\*p  $\leq$  0.05

Supplementary table 117. Multivariable regression of transformed PASAT score against onset age group, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Age at testing	-0.040 (0.040)	-1.009	0.317
Onset $\geq$ 30	0.135 (0.583)	0.231	0.818
Onset age group * age at testing	0.069 (1.548)	0.127	0.127

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.001	1.44 (65)	1.024 (3, 65)	0.388	8.15

\*\*p  $\leq$  0.05

Supplementary table 118. Multivariable regression of transformed PASAT score against onset age group, disease duration and onset age group\*duration

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Disease duration	0.000 (0.003)	0.023	0.981
Onset $\geq$ 30	-0.108 (0.403)	-0.267	0.790
Onset age group * disease duration	0.000 (0.004)	0.061	0.951

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.044	1.47 (65)	0.039 (3, 65)	0.990	2.45

\*\*p  $\leq$  0.05

Supplementary table 119: Multivariable regression of transformed PASAT score against onset age group, HADS-A score and onset age group\*HADS-A score

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
HADS-A score	-0.039 (0.073)	-0.536	0.595
Onset $\geq$ 30	-1.355 (0.946)	-1.433	0.158
Onset age group * HADS-A score	0.149 (0.096)	1.546	0.128

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.014	1.45 (52)	1.261 (3, 52)	0.298	5.23

\*\*p  $\leq$  0.05

Supplementary table 120. Multivariable regression of transformed PASAT score against onset age group, presence of SILs and onset age group\*SILs

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	0.624 (0.591)	1.056	0.295
Onset $\geq$ 30	0.257 (0.496)	0.519	0.606
Onset age group * SIL status	-0.917(0.828)	-1.108	0.272

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.024	1.48 (63)	0.494 (3, 63)	0.688	2.31

\*\*p  $\leq$  0.05

Supplementary table 121. Multivariable regression of WLGT score against onset age group, diagnosis and onset age group\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Diagnosis AQP4+ NMOSD**	-3.933 (3.620)	-1.086	0.281
Onset $\geq$ 30	1.650 (2.867)	0.614	0.541
Onset age group *diagnosis	2.389 (4.444)	0.538	0.593

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.000	8,59 (69)	1.001 (3, 69)	0.318	3.49

\*\*p  $\leq$  0.05

Supplementary table 122. Multivariable regression of WLGT score against onset age group, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Age at testing	0.075 (0.237)	0.319	0.751
Onset $\geq$ 30	1.000 (3.453)	0.290	0.773
Onset age group * age at testing	0.051 (0.266)	0.193	0.848

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.005	8.61 (69)	0.883 (3, 69)	0.454	8.32

\*\*p  $\leq$  0.05

Supplementary table 123. Multivariable regression of WLGT score against onset age group, disease duration and onset age group\*disease duration

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Disease duration	-0.001 (0.018)	-0.060	0.953
Onset $\geq$ 30 years	3.074 (2.382)	1.290	0.201
Onset age group* disease duration	0.023 (0.025)	0.925	0.358

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.044	8.58 (69)	1.061 (3, 69)	0.371	2.65

\*\*p  $\leq$  0.05

Supplementary table 124. Multivariable regression of WLGT score against onset age group, HADS-A score and onset age group\*HADS-A score

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
HADS-A score	-0.442 (0.453)	-0.976	0.333
Onset $\geq$ 30	-0.432 (5.636)	-0.077	0.939
Onset age group * HADS-A score	0.062 (0.569)	0.108	0.914

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.008	8.65 (55)	0.848 (3, 55)	0.473	5.14

\*\*p  $\leq$  0.05

Supplementary table 125. Multivariable regression of WLGT score against onset age group, presence of SILs and onset age group\*SILs

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	-1.417 (3.290)	-0.431	0.668
Onset $\geq$ 30	0.719 (2.668)	0.270	0.788
Onset age group * SILs**	3.864 (4.443)	0.870	0.388

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.089	9.40 (50)	2.726 (3, 50)	0.054	2.71

\*\*p  $\leq$  0.05

Supplementary table 126. Multivariable regression of Stroop interference score against onset age group, diagnosis and onset age group\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Diagnosis AQP4+ NMOSD	-6.919 (5.163)	-1.340	0.186
Onset $\geq$ 30	-1.551 (3.424)	-0.453	0.652
Onset age group * diagnosis	0.270 (6.139)	0.044	0.965

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.054	9.57 (51)	2.019 (3, 51)	0.123	3.86

\*\*p  $\leq$  0.05

Supplementary table 127. Multivariable regression of Stroop interference score against onset age group, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Age at testing	-0.256 (0.326)	-0.785	0.436
Onset $\geq$ 30	2.235 (4.412)	0.507	0.615
Onset age group * age at testing	0.023 (0.362)	0.064	0.949

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.000	9.84 (51)	1.006 (3, 51)	0.398	7.96

\*\*p  $\leq$  0.05

Supplementary table 128. Multivariable regression of Stroop interference score against onset age group, disease duration and onset age group\*disease duration

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Disease duration	-0.020 (0.022)	-0.906	0.369
Onset $\geq$ 30	-2.872 (3.162)	-0.908	0.368
Onset age group * disease duration	-0.001 (0.030)	-0.037	0.971

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.016	9.92 (51)	0.718 (3, 51)	0.546	2.48

\*\*p  $\leq$  0.05

Supplementary table 129: Multivariable regression of Stroop interference score against onset age group, HADS-A score and onset age group\*HADS-A score

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
HADS-A score	0.942 (0.623)	1.512	0.138
Onset $\geq$ 30	12.633 (7.682)	1.645	0.108
Onset age group * HADS-A score**	-1.699 (0.752)	0.752	0.029

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.059	9,87 (41)	1.912 (3, 41)	0.143	4.95

\*\*p  $\leq$  0.05

Supplementary table 130. Multivariable regression of Stroop interference score against onset age group, presence of SILs and onset age group\*SILs

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	-6.338 (4.700)	-1.349	0.184
Onset $\geq$ 30	-6.171 (3.728)	-1.655	0.104
Onset age group * SILs**	16.114 (6.129)	2.629	0.011

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.089	9.40 (50)	2.726 (3, 50)	0.054	2.71

\*\*p  $\leq$  0.05

Supplementary table 131. Multivariable regression of transformed SRT-LTS score against presence of SILs, diagnosis and SIL\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	0.274 (0.397)	0.692	0.492
Diagnosis AQP4+ NMOSD	0.002 (0.368)	0.006	0.995
SIL*diagnosis interaction	0.450 (0.663)	0.679	0.500

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.007	1.26 (69)	0.836 (3, 69)	0.479	1.97

\*\*p  $\leq$  0.05



Supplementary table 132. Multivariable regression of transformed SRT-LTS score against presence of SILs, testing age and SIL\*testing age interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	0.423 (0.338)	1.341	0.184
Age at testing	0.012 (0.016)	0.746	0.458
SIL*testing age interaction	-0.012 (0.026)	-0.469	0.641

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.009	1.26 (69)	0.798 (3, 69)	0.500	1.78

\*\*p ≤ 0.05

Supplementary table 133. Multivariable regression of SRT-CLTR score against presence of SILs, diagnosis and SIL\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	-2.265 (4.708)	-0.481	0.632
Diagnosis AQP4+ NMOSD	-1.328 (4.361)	-0.304	0.762
SIL*diagnosis interaction	-6.847 (7.872)	-0.870	0.387

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.002	14.97 (69)	1.046 (3, 69)	0.378	1.97

\*\*p ≤ 0.05

Supplementary table 134. Multivariable regression of SRT-CLTR score against presence of SILs, testing age and SIL\*testing age interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	-5.495 (4.024)	-1.365	0.177
Age at testing	-0.165 (0.188)	-0.880	0.382
SIL*testing age interaction	0.061 (0.307)	0.197	0.844

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.008	15.04 (69)	0.812 (3, 69)	0.492	1.78

\*\*p ≤ 0.05

Supplementary table 135. Multivariable regression of transformed SRT-DR score against presence of SILs, diagnosis and SIL\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	-0.069 (0.218)	-0.318	0.751
Diagnosis AQP4+ NMOSD	0.028 (0.202)	0.139	0.890
SIL*diagnosis interaction	0.471 (0.377)	1.250	0.215

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.005	0.69 (68)	0.894 (3, 68)	0.449	1.86

\*\*p ≤ 0.05

Supplementary table 136. Multivariable regression of transformed SRT-DR score against presence of SILs, testing age and SIL\*testing age interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	0.070 (0.288)	0.375	0.709
Age at testing	0.011 (0.009)	1.268	0.209
SIL*testing age interaction	-0.017 (0.014)	-1.205	0.232

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.013	0.70 (68)	0.702 (3, 68)	0.554	1.73

\*\*p ≤ 0.05

Supplementary table 137. Multivariable regression of SPART-IR score against presence of SILs, diagnosis and SIL\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	0.363 (1.734)	0.210	0.834
Diagnosis AQP4+ NMOSD	-2.745 (1.606)	-1.709	0.092
SIL*diagnosis interaction	-2.093 (2.991)	-0.700	0.487

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.048	5.51 (68)	2.203 (3, 68)	0.096	1.86

\*\*p ≤ 0.05

Supplementary table 138: Multivariable regression of SPART-IR score against presence of SILs, testing age and SIL\*testing age interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	0.014 (1.552)	0.009	0.993
Age at testing	-0.034 (0.072)	-0.468	0.641
SIL*testing age interaction	0.076 (0.118)	0.647	0.520

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.037	5.76 (68)	0.145 (3, 68)	0.932	1.75

\*\*p ≤ 0.05

Supplementary table 139. Multivariable regression of transformed SPART-DR score against presence of SILs, diagnosis and SIL\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	-0.056 (0.200)	-0.282	0.779
Diagnosis AQP4+ NMOSD	0.285 (0.189)	1.512	0.135
SIL*diagnosis interaction	0.256 (0.361)	0.480	0.480

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.033	0.64 (66)	1.795 (3, 66)	0.157	1.76

\*\*p ≤ 0.05

Supplementary table 140. Multivariable regression of transformed SPART-DR score against presence of SILs, testing age and SIL\*testing age interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	-0.067 (0.179)	-0.374	0.709
Age at testing	0.000 (0.008)	-0.045	0.964
SIL*testing age interaction	-0.013 (0.014)	-0.942	0.349

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.022	0.65 (66)	0.498 (3, 66)	0.685	1.71

\*\*p ≤ 0.05

Supplementary table 141. Multivariable regression of SDMT score against presence of SILs, diagnosis and SIL\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	0.000 (3.344)	0.000	~1
Diagnosis AQP4+ NMOSD**	-8.042 (3.100)	-2.594	0.012
SIL*diagnosis interaction	-7.729 (5.748)	-1.345	0.183

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.175	10.57 (67)	5.945 (3, 67)	0.001	1.86

\*\*p ≤ 0.05

Supplementary table 142. Multivariable regression of SDMT score against presence of SILs, testing age and SIL\*testing age interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	-1.939 (3.159)	-0.614	0.541
Age at testing	-0.214 (0.147)	-1.453	0.151
SIL*testing age interaction	0.302 (0.240)	1.256	0.214

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.004	11.66 (67)	0.910 (3, 67)	0.441	1.76

\*\*p ≤ 0.05

Supplementary table 143. Multivariable regression of transformed PASAT score against presence of SILs, diagnosis and SIL\*diagnosis interaction

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
SILs present	0.202 (0.411)	0.625	0.625
Diagnosis AQP4+ NMOSD**	1.569 (0.386)	4.068	<0.001
SIL*diagnosis interaction	0.113 (0.700)	0.161	0.872

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.251	1.26 (63)	8,378 (3, 63)	<0.001	1.93

\*\*p ≤ 0.05

Supplementary table 144. Multivariable regression of transformed PASAT score against presence of SILs, testing age and SIL\*testing age interaction

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
SILs present	0.124 (0.408)	0.304	0.762
Age at testing	0.022 (0.019)	1.169	0.247
SIL*testing age interaction	-0.042 (0.031)	-1.358	0.179

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.012	1.47 (63)	0.750 (3, 63)	0.527	1.77

\*\*p ≤0.05

Supplementary table 145. Multivariable regression of WLGT score against presence of SILs, diagnosis and SIL\*diagnosis interaction

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
SILs present	1.037 (2.604)	0.398	0.692
Diagnosis AQP4+ NMOSD	-0.783 (2.356)	-0.332	0.741
SIL*diagnosis interaction	-3.217 (4.423)	-0.727	0.469

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.026	8.09 (67)	0.417 (3, 67)	0.741	1.89

\*\*p ≤0.05

Supplementary table 146. Multivariable regression of WLGT score against presence of SILs, testing age and SIL\*testing age interaction

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
SILs present	1.011 (2.173)	0.465	0.643
Age at testing	0.022 (0.100)	0.221	0.826
SIL*testing age interaction	0.194 (0.166)	1.166	0.248

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
-0.004	8.00 (67)	0.039 (3, 67)	0.447	1.69

\*\*p ≤0.05

Supplementary table 147. Multivariable regression of Stroop interference score against presence of SILs, diagnosis and SIL\*diagnosis interaction

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
SILs present	2.209 (3.338)	0.662	0.511
Diagnosis AQP4+ NMOSD**	-6.650 (3.173)	-2.096	0.041
SIL*diagnosis interaction	-0.294 (6.907)	-0.042	0.966

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.069	9.51 (50)	2.302 (3, 50)	0.088	1.89

\*\*p ≤0.05



Supplementary table 148. Multivariable regression of Stroop interference score against presence of SILs, testing age and SIL\*testing age interaction

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
SILs present	3.840 (3.017)	1.273	0.209
Age at testing**	-0.328 (0.137)	-2.399	0.020
SIL*testing age interaction**	0.623 (0.258)	2.435	0.018

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)	Max VIF
0.100	9.34 (3, 50)	2.969 (3, 50)	0.041	1.56

\*\*p ≤ 0.05

Supplementary table 149. Multivariable regression of transformed SRT-LTS score against onset age group, age at onset and onset age group\*age at onset

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Age at onset**	-0.078 (0.034)	-2.134	0.024
Onset age group ≥30	0.957 (0.608)	1.572	0.120
Age at onset * onset age group**	0.109 (0.038)	2.870	0.005

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.069	1.22 (3, 71)	2.821 (3, 71)	0.045

\*\*p ≤ 0.05

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>
11.52	4.22	5.61

Supplementary table 150. Multivariable regression of SRT-CLTR score against onset age group, age at onset and onset age group\*age at onset

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Age at onset**	0.863 (0.400)	2.156	0.034
Onset age group ≥30	-11.736 (7.230)	-1.623	0.109
Age at onset * onset age group**	-1.269 (0.453)	-2.799	0.007

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.070	14.51 (71)	2.585	0.043

\*\*p ≤0.05

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>
11.52	4.22	5.61

Supplementary table 151. Multivariable regression of transformed SRT-DR score against onset age group, age at onset and onset age group\*age at onset

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Age at onset**	-0.051 (0.018)	-2.851	0.006
Onset age group ≥30**	0.744 (0.323)	2.300	0.024
Age at onset * onset age group**	0.071 (0.020)	3.513	<0.001

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.070	14.51 (71)	2.585	0.043

\*\*p ≤0.05

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>
11.33	4.12	5.60

Supplementary table 152. Multivariable regression of SPART-IR score against onset age group, age at onset and onset age group\*age at onset

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Age at onset	0.229 (0.161)	1.421	0.160
Onset age group ≥30	-2.398 (2.862)	1.421	0.405
Age at onset * onset age group	-0.308 (0.182)	-1.696	0.094

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.000	5.72 (70)	0.993 (3, 70)	0.040

\*\*p ≤0.05

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>
11.59	4.15	5.76

Supplementary table 153. Multivariable regression of transformed SPART-DR score against onset age group, age at onset and onset age group\*age at onset

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Age at onset	-0.028 (0.018)	-1.535	0.181
Onset age group ≥30	0.443 (0.328)	1.351	0.129
Age at onset * onset age group	0.031 (0.021)	1.468	0.146

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
-0.007	0.65 (68)	0.825 (3, 68)	0.485

\*\*p ≤0.05

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>
11.19	3.93	5.73

Supplementary table 154. Multivariable regression of SDMT score against onset age group, age at onset and onset age group\*age at onset

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Age at onset	0.463 (0.315)	1.469	0.146
Onset age group ≥30	-2.751 (5.625)	-0.489	0.626
Age at onset * onset age group**	-0.854 (0.357)	-2.395	0.019

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.062	11.21 (69)	2.594 (3, 69)	0.060

\*\*p ≤0.05

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>
11.59	4.14	5.73

Supplementary table 155. Multivariable regression of transformed PASAT score against onset age group, age at onset and onset age group\*age at onset

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Age at onset	-0.037 (0.040)	-0.922	0.360
Onset age group ≥30	0.162 (0.724)	0.224	0.824
Age at onset * onset age group	0.069 (0.046)	1.524	0.132

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.002	0.38 (65)	1.047 (3, 65)	0.378

\*\*p ≤0.05

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>
10.91	4.04	5.32

Supplementary table 156. Multivariable regression of WLGT score against onset age group, age at onset and onset age group\*age at onset

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Age at onset	0.097 (0.246)	0.395	0.694
Onset age group $\geq 30$	0.923 (4.487)	0.206	0.838
Age at onset * onset age group	-0.077 (0.277)	-0.277	0.782

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
-0.020	8,67 (69)	0.540 (3, 69)	0.657

\*\*p  $\leq 0.05$

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>
11.89	4.31	5.80

Supplementary table 157. Multivariable regression of Stroop interference score against onset age group, age at onset and onset age group\*age at onset

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Age at onset	0.111 (0.355)	0.314	0.755
Onset age group $\geq 30$	-1.952 (5.877)	-0.332	0.741
Age at onset * onset age group	-0.264 (0.395)	-0.668	0.507

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
-0.036	10.08 (51)	0.367 (3, 51)	0.777

\*\*p  $\leq 0.05$

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>
11.23	3.90	5.97

Supplementary table 158. Multivariable regression of transformed SRT-LTS score against onset age group, age at onset, onset age group\*age at onset, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P	**p ≤0.05
Age at onset	-0.073 (0.037)	-1.973	0.052	
Onset age group ≥30	0.990 (0.635)	1.559	0.124	
Age at onset * onset age group**	0.138 (0.048)	2.899	0.005	
Age at testing	-0.013 (0.036)	-0.354	0.724	
Age at testing * onset age group	-0.028 (0.046)	-0.593	0.555	

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.070	1.22 (69)	2.107 (5, 69)	0.075

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>	VIF <sub>age at testing</sub>	VIF <sub>age at testing*onset age group</sub>
13.78	4.61	8.76	10.12	8.17

Supplementary table 159. Multivariable regression of SRT-CLTR score against onset age group, age at onset, onset age group\*age at onset, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P	**p ≤0.05
Age at onset	0.774 (0.439)	1.764	0.082	
Onset age group ≥30	-12.517 (7.575)	-1.652	0.103	
Age at onset * onset age group**	-1.519 (0.568)	-2.767	0.009	
Age at testing	0.217 (0.433)	0.502	0.618	
Age at testing * onset age group	0.188 (0.554)	0.340	0.735	

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.065	14.54 (69)	2.030 (5, 69)	0.085

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>	VIF <sub>age at testing</sub>	VIF <sub>age at testing*onset age group</sub>
13.78	4.61	8.76	10.12	8.17

Supplementary table 160. Multivariable regression of transformed SRT-DR score against onset age group, age at onset, onset age group\*age at onset, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P	**p ≤0.05
Age at onset**	-0.048 (0.019)	-2.453	0.017	
Onset age group ≥30**	0.766 (0.336)	2.279	0.026	
Age at onset * onset age group**	0.088 (0.025)	3.499	<0.001	
Age at testing	-0.008 (0.019)	-0.424	0.673	
Age at testing * onset age group	-0.016 (0.025)	-0.644	0.522	

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.132	0.645 (68)	3.221 (5, 68)	0.011

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>	VIF <sub>age at testing</sub>	VIF <sub>age at testing*onset age group</sub>
13.51	4.49	8.71	10.05	8.24

Supplementary table 161. Multivariable regression of SPART-IR score against onset age group, age at onset, onset age group\*age at onset, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P	**p ≤0.05
Age at onset	0.311 (0.177)	1.758	0.083	
Onset age group ≥30	-1.384 (2.997)	-0.462	0.646	
Age at onset * onset age group	-0.439 (0.227)	-1.933	0.057	
Age at testing	-0.195 (0.171)	-1.143	0.257	
Age at testing * onset age group	0.253 (0.219)	1.157	0.251	

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
-0.007	5.74 (68)	0.889 (5, 68)	0.494

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>	VIF <sub>age at testing</sub>	VIF <sub>age at testing*onset age group</sub>
13.89	4.51	8.93	10.00	8.17

Supplementary table 162. Multivariable regression of transformed SPART-DR score against onset age group, age at onset, onset age group\*age at onset, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Age at onset	-0.024 (0.020)	-1.213	0.229
Onset age group $\geq 30$	0.473 (0.342)	1.383	0.171
Age at onset * onset age group	0.043 (0.026)	1.673	0.099
Age at testing	-0.009 (0.020)	-0.476	0.635
Age at testing * onset age group	-0.010 (0.025)	-0.417	0.678

\*\*p  $\leq 0.05$

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
-0.010	0.655 (66)	0.863 (6, 55)	0.511

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>	VIF <sub>age at testing</sub>	VIF <sub>age at testing*onset age group</sub>
13.33	4.27	8.84	9.78	8.21

Supplementary table 163. Multivariable regression of SDMT score against onset age group, age at onset, onset age group\*age at onset, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Age at onset	0.381 (0.349)	1.091	0.279
Onset age group $\geq 30$	-3.773 (5.931)	-0.636	0.527
Age at onset * onset age group	-0.688 (0.448)	-1.534	0.130
Age at testing	0.196 (0.338)	0.580	0.564
Age at testing * onset age group	-0.298 (0.435)	-0.686	0.495

\*\*p  $\leq 0.05$

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.041	11.33 (67)	1.617 (5, 67)	0.168

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>	VIF <sub>age at testing</sub>	VIF <sub>age at testing*onset age group</sub>
13.88	4.50	8.85	9.92	7.99



Supplementary table 164. Multivariable regression of transformed PASAT score against onset age group, age at onset, onset age group\*age at onset, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P	**p ≤0.05
Age at onset	-0.024 (0.044)	-0.558	0.579	
Onset age group ≥30	0.319 (0.764)	0.417	0.678	
Age at onset * onset age group	0.047 (0.057)	0.812	0.420	
Age at testing	-0.030 (0.044)	-0.690	0.493	
Age at testing * onset age group	0.043 (0.056)	0.764	0.448	

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
-0.020	1.45 (63)	0.736 (5, 63)	0.599

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>	VIF <sub>age at testing</sub>	VIF <sub>age at testing*onset age group</sub>
13.00	4.40	8.28	9.72	7.85

Supplementary table 165. Multivariable regression of WLGT score against onset age group, age at onset, onset age group\*age at onset, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P	**p ≤0.05
Age at onset	0.078 (0.270)	0.290	0.773	
Onset age group ≥30	0.979 (4.617)	0.212	0.833	
Age at onset * onset age group	-0.323 (0.345)	-0.935	0.353	
Age at testing	0.043 (0.262)	0.166	0.869	
Age at testing * onset age group	0.272 (0.333)	0.817	0.417	

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
-0.014	8.65 (67)	0.802 (5, 67)	0.552

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>	VIF <sub>age at testing</sub>	VIF <sub>age at testing*onset age group</sub>
14.45	4.59	9.05	10.11	8.32

Supplementary table 166. Multivariable regression of Stroop interference score against onset age group, age at onset, onset age group\*age at onset, age at testing and onset age group\*age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Age at onset	0.176 (0.362)	0.487	0.628
Onset age group ≥30	-0.185 (6.299)	-0.029	0.977
Age at onset * onset age group	-0.082 (0.452)	-0.181	0.857
Age at testing	-0.290 (0.339)	-0.857	0.395
Age at testing * onset age group	-0.009 (0.421)	-0.022	0.982

\*\*p ≤0.05

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
-0.033	10.00 (49)	0.656 (5, 49)	0.658

c. Variance inflation factors

VIF <sub>age at onset</sub>	VIF <sub>onset age group</sub>	VIF <sub>age at onset*onset age group</sub>	VIF <sub>age at testing</sub>	VIF <sub>age at testing*onset age group</sub>
11.74	4.50	7.82	8.33	7.33

Supplementary table 167: Transformed SRT-LTS score against age at onset after fitting restricted cubic splines

Factor	DF	Partial sum of squares	F statistic	p
Age at onset	3	11.99	2.67	0.054
Non-linear component*	2	11.79	3.93	0.024

Supplementary table 168: SRT-CLTR score against age at onset after fitting restricted cubic splines

Factor	DF	Partial sum of squares	F statistic	p
Age at onset	3	1662.78	2.61	0.058
Non-linear component*	2	1514.25	3.57	0.034

Supplementary table 169: Transformed SRT-DR score against age at onset after fitting restricted cubic splines

Factor	DF	Partial sum of squares	F statistic	p
Age at onset*	3	5.10	3.98	0.011
Non-linear component*	2	4.69	5.48	0.006

Supplementary table 170: SPART-IR score against age at onset after fitting restricted cubic splines

Factor	DF	Partial sum of squares	F statistic	p
Age at onset	3	102.79	1.05	0.376
Non-linear component	2	102.51	1.57	0.215

Supplementary table 171: Transformed SPART-DR score against age at onset after fitting restricted cubic splines

Factor	DF	Partial sum of squares	F statistic	p
Age at onset	3	1.03	0.80	0.497
Non-linear component	2	1.02	1.19	0.309

Supplementary table 172: SDMT score against age at onset after fitting restricted cubic splines

Factor	DF	Partial sum of squares	F statistic	p
Age at onset	3	867.48	2.27	0.088
Non-linear component*	2	819.81	3.22	0.046

Supplementary table 173: Transformed PASAT score against age at onset after fitting restricted cubic splines

Factor	DF	Partial sum of squares	F statistic	p
Age at onset	3	6.56	1.06	0.373
Non-linear component	2	6.42	1.55	0.220

Supplementary table 174: WLGT score against age at onset after fitting restricted cubic splines

Factor	DF	Partial sum of squares	F statistic	p
Age at onset	3	193.56	0.87	0.461
Non-linear component	2	96.80	0.65	0.524

Supplementary table 175. Stroop interference score against age at onset after fitting restricted cubic splines

Factor	DF	Partial sum of squares	F statistic	p
Age at onset	3	117.05	0.39	0.761
Non-linear component	2	53.58	0.65	0.524

Supplementary table 176. Multivariable regression of transformed SRT-LTS score against paediatric onset, diagnosis, and paediatric onset \* diagnosis

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset**	1.571 (0.611)	2.570	0.012
Diagnosis MOGAD	0.164 (0.323)	0.508	0.613
Paediatric onset * diagnosis	-1.592 (0.845)	-1.885	0.064

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.049	1.23	2.265	0.088

\*\*p ≤0.05

Supplementary table 177. Multivariable regression of transformed SRT-LTS score against paediatric onset, age at testing, and paediatric onset \* age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	0.532 (0.717)	0.742	0.461
Age at testing	0.014 (0.014)	1.028	0.307
Paediatric onset * age at testing	-0.032 (0.045)	-0.715	0.477

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.018	1.25	1.441	0.238

\*\*p ≤ 0.05

Supplementary table 178. Multivariable regression of transformed SRT-LTS score against paediatric onset, disease duration, and paediatric onset \* disease duration

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	0.887 (0.629)	1.411	0.162
Disease duration	-0.004 (0.002)	-1.670	0.099
Paediatric onset * disease duration	0.003 (0.005)	0.630	0.531

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.039	1.24	1.990	0.123

\*\*p ≤ 0.05

Supplementary table 179. Multivariable regression of transformed SRT-LTS score against paediatric onset, SIL status, and paediatric onset \* SIL status

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	0.704 (0.904)	0.779	0.438
SILs present	0.258 (0.370)	0.696	0.489
Paediatric onset * SILs	-0.125 (1.057)	-0.119	0.906

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.008	1.25	1.196	0.318

\*\*p ≤ 0.05

Supplementary table 180. Multivariable regression of SRT-CLTR score against paediatric onset, diagnosis and paediatric onset \* diagnosis

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset**	-18.209 (7.233)	-2.518	0.014
Diagnosis MOGAD	-0.572 (3.383)	0.149	0.882
Paediatric onset * diagnosis**	22.372 (9.995)	2.238	0.028

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.058	14.60	2.517	0.065

\*\*p ≤ 0.05

Supplementary table 181. Multivariable regression of SRT-CLTR score against paediatric onset, age at testing and paediatric onset \* age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-2.395 (8.525)	-0.281	0.780
Age at testing	-0.230 (0.162)	-1.425	0.159
Paediatric onset * age at testing	0.604 (0.535)	1.127	0.263

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.019	14.90	1.481	0.227

\*\*p ≤ 0.05

Supplementary table 182. Multivariable regression of SRT-CLTR score against paediatric onset, disease duration and paediatric onset \* disease duration

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-10.648 (7.558)	-1.409	0.163
Disease duration	0.038 (0.026)	1.472	0.145
Paediatric onset * disease duration	-0.011 (0.055)	-0.201	0.815

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.018	14.91	1.446	0.237

\*\*p ≤ 0.05

Supplementary table 183. Multivariable regression of SRT-CLTR score against paediatric onset, SIL status and paediatric onset \* SIL status

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-2.146 (10.853)	-0.198	0.844
SILs present	-2.446 (4.448)	-0.550	0.584
Paediatric onset * SILs	-4.304 (12.693)	-0.339	0.736

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
-0.007	15.04	0.825	0.485

\*\*p ≤ 0.05

Supplementary table 184. Multivariable regression of transformed SRT-DR score against paediatric onset, diagnosis and paediatric onset \* diagnosis

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset**	0.999 (0.264)	2.747	0.008
Diagnosis MOGAD	0.008 (0.175)	0.046	0.963
Paediatric onset * diagnosis**	-0.978 (0.482)	-2.029	0.046

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.016	0.69	1.396	0.252

\*\*p ≤ 0.05



Supplementary table 185. Multivariable regression of transformed SRT-DR score against paediatric onset, age at testing and paediatric onset \* age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	0.370 (0.390)	0.949	0.346
Age at testing	0.012 (0.007)	1.587	0.117
Paediatric onset * age at testing	-0.020 (0.024)	-0.816	0.417

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.042	0.68	2.066	0.113

\*\*p ≤ 0.05

Supplementary table 186. Multivariable regression of transformed SRT-DR score against paediatric onset, disease duration and paediatric onset \* disease duration

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	0.571 (0.378)	1.509	0.136
Disease duration**	-0.003 (0.001)	-2.186	0.032
Paediatric onset * disease duration	0.002 (0.003)	0.743	0.460

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.070	0.67	2.833	0.044

\*\*p ≤ 0.05

Supplementary table 187. Multivariable regression of transformed SRT-DR score against paediatric onset, SIL status and paediatric onset \* SIL status

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	0.214 (0.496)	0.432	0.667
SILs present	-0.108 (0.203)	-0.531	0.597
Paediatric onset * SILs	0.399 (0.587)	0.679	0.499

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.016	0.69	1.396	0.252

\*\*p ≤0.05

Supplementary table 188. Multivariable regression of SPART-IR score against paediatric onset, diagnosis and paediatric onset \* diagnosis

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset**	-6.136 (2.976)	-2.062	0.043
Diagnosis MOGAD	2.201 (1.435)	1.534	0.130
Paediatric onset * diagnosis	4.299 (3.943)	1.090	0.279

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.084	5.48	3.222	0.028

\*\*p ≤0.05

Supplementary table 189. Multivariable regression of SPART-IR score against paediatric onset, age at testing and paediatric onset \* age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset**	-7.609 (3.265)	-2.331	0.023
Age at testing	-0.055 (0.061)	-0.910	0.366
Paediatric onset * age at testing	-0.205 (0.201)	-1.019	0.311

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.048	5.58	2.231	0.092

\*\*p ≤ 0.05

Supplementary table 190. Multivariable regression of SPART-IR score against paediatric onset, disease duration and paediatric onset \* disease duration

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-1.746 (2.912)	-0.599	0.551
Disease duration	0.007 (0.019)	0.714	0.478
Paediatric onset * disease duration	-0.027 (0.021)	-1.319	0.191

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.036	5.62	1.909	0.136

\*\*p ≤ 0.05

Supplementary table 191. Multivariable regression of SPART-IR score against paediatric onset, SIL status and paediatric onset \* SIL status

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-6.625 (4.008)	-1.653	0.103
SILs present	0.942 (1.643)	0.573	0.568
Paediatric onset * SILs	2.415 (4.746)	0.509	0.612

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.034	5.55	1.827	0.150

\*\*p ≤0.05

Supplementary table 192. Multivariable regression of transformed SPART-DR score against paediatric onset, diagnosis and paediatric onset \* diagnosis

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	0.650 (0.391)	1.659	0.102
Diagnosis MOGAD	-0.251 (0.169)	-1.485	0.142
Paediatric onset * diagnosis	-0.528 (0.493)	-1.071	0.288

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.053	0.634	2.325	0.083

\*\*p ≤0.05

Supplementary table 193. Multivariable regression of transformed SPART-DR score against paediatric onset, age at testing and paediatric onset \* age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	0.027 (0.384)	0.071	0.944
Age at testing	0.002 (0.007)	0.269	0.788
Paediatric onset * age at testing	-0.025 (0.024)	-1.075	0.286

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.000	0.652	0.999	0.399

\*\*p ≤0.05

Supplementary table 194. Multivariable regression of transformed SPART-DR score against paediatric onset, disease duration and paediatric onset \* disease duration

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	0.716 (0.377)	1.899	0.062
Disease duration	-0.001 (0.001)	-0.972	0.335
Paediatric onset * disease duration	-0.002 (0.003)	-0.703	0.484

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.020	0.645	1.472	0.230

\*\*p ≤0.05

Supplementary table 195. Multivariable regression of transformed SPART-DR score against paediatric onset, SIL status and paediatric onset \* SIL status

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-0.440 (0.452)	-0.973	0.334
SILs present	-0.250 (0.186)	-1.346	0.183
Paediatric onset * SILs**	1.229 (0.544)	2.259	0.027

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.064	0.626	2.582	0.061

\*\*p ≤0.05

Supplementary table 196. Multivariable regression of SDMT score against paediatric onset, diagnosis and paediatric onset \* diagnosis

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset**	-13.091 (5.666)	-2.310	0.024
Diagnosis MOGAD**	7.481 (2.744)	2.727	0.008
Paediatric onset * diagnosis	14.519 (7.512)	1.933	0.057

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.189	10.42	6.585	0.001

\*\*p ≤0.05

Supplementary table 197. Multivariable regression of SDMT score against paediatric onset, age at testing and paediatric onset \* age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-1.501 (6.624)	-0.277	0.821
Age at testing	-0.230 (0.124)	-1.855	0.068
Paediatric onset * age at testing	0.584 (0.407)	1.433	0.156

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.044	11.315	2.111	0.107

\*\*p ≤0.05

Supplementary table 198. Multivariable regression of SDMT score against paediatric onset, disease duration and paediatric onset \* disease duration

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-11.040 (5.985)	-1.845	0.069
Disease duration	-0.003 (0.020)	-0.125	0.901
Paediatric onset * disease duration	0.049 (0.043)	1.139	0.259

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.007	11.54	1.163	0.330

\*\*p ≤0.05

Supplementary table 199. Multivariable regression of SDMT score against paediatric onset, SIL status and paediatric onset \* SIL status

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	1.479 (8.392)	0.176	0.861
SILs present	0.979 (3.447)	0.284	0.777
Paediatric onset * SILs	-10.336 (9.937)	-1.040	0.302

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.003	11.62	1.069	0.368

\*\*p ≤0.05

Supplementary table 200. Multivariable regression of transformed PASAT score against paediatric onset, diagnosis and paediatric onset \* diagnosis

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	0.360 (0.683)	0.527	0.600
Diagnosis MOGAD**	-1.560 (0.342)	-4.568	<0.001
Paediatric onset * diagnosis	0.115 (0.904)	0.127	0.899

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.250	1.25	8.547	<0.001

\*\*p ≤0.05



Supplementary table 201. Multivariable regression of transformed PASAT score against paediatric onset, age at testing and paediatric onset \* age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	0.577 (0.834)	0.692	0.492
Age at testing	0.015 (0.016)	0.953	0.344
Paediatric onset * age at testing	-0.019 (0.052)	-0.365	0.719

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
-0.011	1.45	1.448	0.527

\*\*p ≤ 0.05

Supplementary table 202. Multivariable regression of transformed PASAT score against paediatric onset, disease duration and paediatric onset \* disease duration

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	0.605 (0.826)	0.733	0.466
Disease duration	-0.001 (0.003)	-0.522	0.603
Paediatric onset * disease duration	0.001 (0.006)	0.252	0.802

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
-0.021	1.46	0.530	0.663

\*\*p ≤ 0.05

Supplementary table 203. Multivariable regression of transformed PASAT score against paediatric onset, SIL status and paediatric onset \* Sil status

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	1.122 (1.066)	1.052	0.297
SILs present	0.104 (0.452)	0.231	0.818
Paediatric onset * SILs	-0.741 (1.266)	-0.585	0.561

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
-0.021	1.47	0.547	0.652

\*\*p ≤0.05

Supplementary table 204. Multivariable regression of WLGT score against paediatric onset, diagnosis and paediatric onset \* diagnosis

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-6.273 (4.659)	-1.346	0.183
Diagnosis MOGAD	1.299 (2.256)	0.576	0.567
Paediatric onset * diagnosis	7.701 (6.176)	1.247	0.217

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.004	8.57	1.089	0.360

\*\*p ≤0.05

Supplementary table 205. Multivariable regression of WLGT score against paediatric onset, age at testing and paediatric onset \* age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-2.194 (4.943)	-0.444	0.659
Age at testing	0.146 (0.094)	1.551	0.125
Paediatric onset * age at testing	-0.177 (0.311)	-0.571	0.570

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
-0.001	8.59	0.967	0.414

\*\*p ≤0.05

Supplementary table 206. Multivariable regression of WLGT score against paediatric onset, disease duration and paediatric onset \* disease duration

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-1.119 (4.906)	-0.228	0.820
Disease duration	0.016 (0.015)	1.097	0.276
Paediatric onset * disease duration	-0.027 (0.034)	-0.787	0.434

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
-0.017	8.66	0.597	0.619

\*\*p ≤0.05

Supplementary table 207. Multivariable regression of WLGT score against paediatric onset, SIL status and paediatric onset \* SIL status

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-3.521 (5.870)	-0.600	0.551
SILs present	0.265 (2.470)	0.107	0.915
Paediatric onset * SILs	2.307 (6.973)	0.331	0.742

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
-0.038	8.13	0.155	0.926

\*\*p ≤0.05

Supplementary table 208. Multivariable regression of Stroop interference score against paediatric onset, diagnosis and paediatric onset \* diagnosis

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-3.755 (7.206)	-0.521	0.605
Diagnosis MOGAD**	6.290 (2.967)	2.120	0.039
Paediatric onset * diagnosis	3.650 (8.805)	0.415	0.680

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.054	9.57	2.020	0.123

\*\*p ≤0.05

Supplementary table 209. Multivariable regression of Stroop interference score against paediatric onset, age at testing and paediatric onset \* age at testing

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	3.066 (5.816)	-0.527	0.600
Age at testing	-0.241 (0.128)	-1.879	0.066
Paediatric onset * age at testing	0.133 (0.409)	0.325	0.746

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
0.013	9.77	1.244	0.303

\*\*p ≤ 0.05

Supplementary table 210. Multivariable regression of Stroop interference score against paediatric onset, disease duration and paediatric onset \* disease duration

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-0.849 (6.912)	-0.123	0.903
Disease duration	-0.024 (0.019)	-1.251	0.217
Paediatric onset * disease duration	0.023 (0.042)	0.542	0.590

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
-0.024	9.97	0.562	0.643

\*\*p ≤ 0.05

Supplementary table 211. Multivariable regression of Stroop interference score against paediatric onset, SIL status and paediatric onset \* SIL status

a. Values of regression coefficients

Independent variable	B (SE)	T statistic	P
Paediatric onset	-1.948 (7.235)	-0.269	0.789
SILs present	4.270 (3.423)	1.248	0.218
Paediatric onset * SILs	-2.414 (9.285)	-0.260	0.796

b. Assessment of model

Adj R <sup>2</sup>	RSE	F statistic	P (F statistic)
-0.024	9.966	0.585	0.627

\*\*p ≤ 0.05

Supplementary table 212. Univariable regressions for transformed SRT-LTS scores (AQP4+ NMOSD only)

Test	β (SE)	T statistic	P	R <sup>2</sup>	F statistic
Age at onset	-0.010 (0.016)	-0.645	0.525	0.016	0.416
Age at testing	-0.019 (0.018)	-1.049	0.304	0.042	1.101
Disease duration	-0.001 (0.003)	-0.290	0.774	0.003	0.084
Paediatric onset*	1.571 (0.592)	2.653	0.014	0.220	7.041
Onset aged <30 yrs	-0.349 (0.535)	-0.652	0.520	0.017	0.426
Sex	0.712 (0.816)	0.872	0.391	0.030	0.761
Education	-0.142 (0.083)	-1.705	0.101	0.108	2.907
HADS-A score	-0.059 (0.080)	-0.742	0.468	0.030	0.551
HADS-D score	0.047 (0.083)	0.568	0.577	0.018	0.323
Total MFIS score	0.013 (0.014)	0.929	0.365	0.043	0.863
MFIS cognitive score	0.024 (0.030)	0.803	0.432	0.033	0.646
BPI score	0.007 (0.010)	0.707	0.489	0.027	0.499
EDSS score	0.211 (0.125)	1.697	0.103	0.107	2.881
SILs present	0.725 (0.551)	1.314	0.201	0.065	1.727

Supplementary table 213. Univariable regressions for SRT-CLTR scores (AQP4+ NMOSD only)

Test	$\beta$ (SE)	T statistic	P	R <sup>2</sup> model	F statistic
Age at onset	0.074 (0.203)	0.366	0.717	0.005	0.134
Age at testing	0.172 (0.232)	0.742	0.465	0.022	0.551
Disease duration	0.014 (0.035)	0.392	0.699	0.006	0.153
Paediatric onset*	-18.209 (7.696)	-2.366	0.026	0.183	5.599
Onset aged <30 yrs	3.076 (6.821)	0.451	0.656	0.008	0.203
Sex	-13.917 (10.149)	-1.371	0.182	0.070	1.880
Education*	2.225 (1.023)	2.175	0.040	0.165	4.729
HADS-A score	0.193 (1.021)	0.189	0.852	0.002	0.036
HADS-D score	-1.251 (1.018)	-1.229	0.235	0.077	1.510
Total MFIS score	-0.218 (0.168)	-1.304	0.208	0.082	1.701
MFIS cognitive score	-0.403 (0.366)	-1.101	0.285	0.060	1.211
BPI score	-0.126 (0.119)	-1.057	0.305	0.058	1.117
EDSS score*	-3.038 (1.511)	-2.010	0.056	0.144	4.041
SILs present	-9.112 (7.010)	-1.300	0.206	0.063	1.690

Supplementary table 214. Univariable regressions for transformed SRT-DR scores (AQP4+ NMOSD only)

Test	$\beta$ (SE)	T statistic	P	R <sup>2</sup> model	F statistic
Age at onset	-0.003 (0.009)	-0.277	0.784	0.003	0.077
Age at testing	-0.008 (0.011)	-0.734	0.470	0.022	0.539
Disease duration	-0.001 (0.002)	-0.513	0.613	0.011	0.263
Paediatric onset*	0.999 (0.364)	2.743	0.011	0.239	7.526
Onset aged <30 yrs	-0.127 (0.315)	-0.402	0.691	0.007	0.161
Sex	0.460 (0.557)	0.827	0.416	0.028	0.684
Education*	-0.109 (0.044)	-2.460	0.022	0.208	6.052
HADS-A score	-0.027 (0.042)	-0.643	0.528	0.022	0.414
HADS-D score	0.031 (0.045)	0.683	0.503	0.025	0.466
Total MFIS score	0.007 (0.007)	0.909	0.375	0.042	0.826
MFIS cognitive score	0.013 (0.016)	0.794	0.437	0.032	0.630
BPI score	0.004 (0.005)	0.756	0.459	0.031	0.572
EDSS score*	0.142 (0.070)	2.039	0.053	0.153	4.156
SILs present	0.401 (0.329)	1.219	0.235	0.058	1.486

Supplementary figure 215. Univariable regressions for SPART-IR scores (AQP4+ NMOSD only)

Test	$\beta$ (SE)	T statistic	P	R <sup>2</sup> model	F statistic
Age at onset	0.040 (0.073)	0.545	0.591	0.012	0.297
Age at testing	0.054 (0.083)	0.658	0.517	0.018	0.433
Disease duration	0.000 (0.013)	0.035	0.972	0.000	0.001
Paediatric onset*	-6.136 (2.994)	-2.050	0.051	0.149	4.201
Onset aged <30 yrs	2.078 (2.424)	0.857	0.400	0.030	0.735
Sex	2.609 (3.626)	0.719	0.479	0.021	0.518
Education	0.558 (0.360)	1.551	0.135	0.095	2.406
HADS-A score	0.460 (0.319)	1.441	0.168	0.109	2.077
HADS-D score	-0.017 (0.343)	-0.050	0.961	0.000	0.002
Total MFIS score	0.005 (0.058)	0.080	0.937	0.000	0.006
MFIS cognitive score	0.019 (0.123)	0.157	0.877	0.001	0.025
BPI score	0.004 (0.036)	0.111	0.913	0.001	0.012
EDSS score	-0.641 (0.592)	-1.083	0.290	0.048	1.172
SILs present	-1.729 (2.616)	-0.661	0.515	0.018	0.437

Supplementary figure 216. Univariable regressions for transformed SPART-DR scores (AQP4+ NMOSD only)

Test	$\beta$ (SE)	T statistic	P	R <sup>2</sup> model	F statistic
Age at onset	-0.006 (0.010)	-0.676	0.506	0.020	0.456
Age at testing	-0.014 (0.011)	-1.324	0.199	0.074	1.753
Disease duration	-0.001 (0.002)	-0.750	0.461	0.025	0.563
Paediatric onset	0.650 (0.431)	1.509	0.146	0.094	2.276
Onset aged <30 yrs	-0.250 (0.325)	-0.771	0.449	0.026	0.595
Sex	0.508 (0.530)	0.958	0.348	0.040	0.918
Education	-0.052 (0.049)	-1.060	0.301	0.051	1.124
HADS-A score	-0.064 (0.044)	-1.469	0.161	0.119	2.157
HADS-D score	-0.023 (0.043)	-0.530	0.604	0.017	0.280
Total MFIS score	-0.003 (0.008)	-0.414	0.684	0.010	0.171
MFIS cognitive score	-0.003 (0.016)	-0.219	0.829	0.003	0.048
BPI score	-0.003 (0.005)	-0.547	0.592	0.018	0.299
EDSS score	0.061 (0.072)	0.855	0.402	0.032	0.731
SILs present	0.200 (0.343)	0.582	0.566	0.015	0.339



Supplementary figure 217. Univariable regressions for SDMT scores (AQP4+ NMOSD only)

Test	$\beta$ (SE)	T statistic	P	R <sup>2</sup> model	F statistic
Age at onset	0.141 (0.134)	1.055	0.302	0.044	1.113
Age at testing	0.231 (0.147)	1.572	0.129	0.093	2.472
Disease duration	0.011 (0.023)	0.453	0.655	0.008	0.205
Paediatric onset*	-13.091 (5.388)	-2.430	0.023	0.197	5.904
Onset aged <30 yrs	6.235 (4.380)	1.424	0.167	0.078	2.027
Sex	-3.855 (6.746)	-0.571	0.573	0.013	0.327
Education	1.038 (0.725)	1.431	0.166	0.082	2.049
HADS-A score *	-1.200 (0.578)	-2.076	0.053	0.202	4.309
HADS-D score*	-1.394 (0.572)	-2.439	0.026	0.259	5.947
Total MFIS score*	-0.247 (0.095)	-2.613	0.018	0.275	6.827
MFIS cognitive score*	-0.522 (0.202)	-2.585	0.019	0.271	6.685
BPI score*	-0.159 (0.068)	-2.340	0.032	0.244	5.474
EDSS score*	-2.999 (0.934)	-3.212	0.004	0.310	10.319
SILs present	-7.729 (4.630)	-1.669	0.108	0.104	2.786

Supplementary figure 218. Univariable regressions for transformed PASAT scores (AQP4+ NMOSD only)

Test	$\beta$ (SE)	T statistic	P	R <sup>2</sup> model	F statistic
Age at onset	0.008 (0.016)	0.516	0.611	0.012	0.266
Age at testing	-0.005 (0.018)	-0.289	0.775	0.004	0.084
Disease duration	-0.004 (0.003)	-1.547	0.136	0.098	2.394
Paediatric onset	0.360 (0.686)	0.525	0.605	0.012	0.276
Onset aged <30 yrs	-0.100 (0.531)	-0.188	0.853	0.002	0.035
Sex	-0.593 (0.922)	-0.644	0.526	0.018	0.414
Education	-0.065 (0.087)	-0.739	0.468	0.025	0.546
HADS-A score	0.045 (0.084)	0.533	0.601	0.017	0.284
HADS-D score	0.136 (0.080)	1.712	0.106	0.155	2.931
Total MFIS score	0.017 (0.014)	1.260	0.225	0.085	1.588
MFIS cognitive score	0.018 (0.031)	0.573	0.574	0.019	0.328
BPI score	0.010 (0.010)	1.030	0.318	0.062	1.060
EDSS score	0.131 (0.120)	1.090	0.288	0.054	1.187
SILs present	0.315 (0.562)	0.560	0.581	0.014	0.314

Supplementary figure 219. Univariable regressions for WLGT scores (AQP4+ NMOSD only)

Test	$\beta$ (SE)	T statistic	P	R <sup>2</sup> model	F statistic
Age at onset	0.047 (0.122)	0.387	0.702	0.006	0.150
Age at testing	0.181 (0.137)	1.318	0.200	0.067	1.737
Disease duration	0.027 (0.020)	1.376	0.181	0.073	1.894
Paediatric onset	-6.273 (5.296)	-1.184	0.248	0.055	1.403
Onset aged <30 yrs	4.039 (4.049)	0.998	0.328	0.040	0.995
Sex	-5.750 (7.284)	-0.789	0.438	0.025	0.623
Education	0.802 (0.639)	1.256	0.222	0.064	1.578
HADS-A score	-0.641 (0.551)	-1.165	0.259	0.070	1.357
HADS-D score*	-1.293 (0.520)	-2.487	0.023	0.256	6.184
Total MFIS score	-0.140 (0.093)	-1.506	0.149	0.107	2.267
MFIS cognitive score	-0.205 (0.208)	-0.985	0.337	0.049	0.971
BPI score	-0.101 (0.067)	-1.512	0.148	0.113	2.285
EDSS score	-1.518 (0.923)	-1.646	0.113	0.105	2.708
SILs present	-2.180 (4.410)	-0.494	0.625	0.010	0.245

Supplementary figure 220. Univariable regressions for Stroop interference scores (AQP4+ NMOSD only)

Test	$\beta$ (SE)	T statistic	P	R <sup>2</sup> model	F statistic
Age at onset	-0.049 (0.187)	-0.262	0.797	0.005	0.069
Age at testing	-0.133 (0.198)	-0.672	0.512	0.029	0.451
Disease duration	-0.014 (0.023)	-0.583	0.569	0.022	0.339
Paediatric onset	-3.755 (7.622)	-0.493	0.629	0.016	0.243
Onset aged <30 yrs	-1.281 (5.423)	-0.236	0.816	0.004	0.056
Sex	0.458 (7.682)	0.060	0.953	0.000	0.004
Education *	2.549 (1.016)	2.509	0.025	0.310	6.297
HADS-A score	-0.660 (0.823)	-0.802	0.441	0.060	0.644
HADS-D score	-0.754 (0.750)	-1.005	0.336	0.084	1.011
Total MFIS score	-0.223 (0.136)	-1.640	0.129	0.197	2.690
MFIS cognitive score	-0.449 (0.306)	-1.465	0.171	0.163	2.147
BPI score	-0.069 (0.086)	-0.806	0.439	0.061	0.650
EDSS score	-1.923 (1.154)	-1.666	0.116	0.156	2.777
SILs present	1.915 (6.475)	0.296	0.771	0.006	0.087

Supplementary table 221. Multivariable regression of transformed SRT-LTS score (AQP4+ NMOSD only)

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Paediatric onset*	1.552 (0.710)	2.185	0.039
SILs present	0.030 (0.604)	0.050	0.960

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.155	1.22 (24)	3.381 (2, 24)	0.051

\*p ≤ 0.05

Supplementary table 222. Multivariable regression of SRT-CLTR score (AQP4+ NMOSD only)

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Paediatric onset	-9.044 (8.707)	-1.039	0.311
Education*	2.095 (0.985)	2.217	0.046
EDSS	-2.125 (1.414)	-1.503	0.149
SILs present	3.300 (7.122)	0.463	0.648

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.202	13.62 (20)	2.516 (4, 20)	0.074

\*p ≤ 0.05

Supplementary table 223. Multivariable regression of transformed SRT-DR score (AQP4+ NMOSD only)

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Paediatric onset	0.562 (0.418)	1.343	0.195
Education*	-0.104 (0.044)	-2.377	0.028
EDSS	0.094 (0.063)	1.499	0.150
SILs present	-0.185 (0.319)	-0.580	0.568

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.270	0.60 (19)	3.126 (4, 19)	0.039

\*p ≤ 0.05

Supplementary table 224. Multivariable regression of SPART-IR score (AQP4+ NMOSD only)

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Paediatric onset	-6.554 (3.444)	-1.903	0.070
SILs present	0.735 (2.801)	0.262	0.796

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.077	5.62 (23)	2.053 (2, 23)	0.151

Supplementary table 225. Multivariable regression of SDMT score (AQP4+ NMOSD only)

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Paediatric onset	-14.943 (8.664)	-1.725	0.123
HADS-A	-2.906 (1.474)	-1.971	0.084
HADS-D	1.577 (1.509)	1.046	0.326
Total MFIS	0.434 (0.360)	1.206	0.262
BPI	-0.205 (0.128)	-1.399	0.199
EDSS	-2.173 (1.596)	-1.362	0.210
SILs present	-7.391 (6.504)	-1.136	0.289

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.376	9.41 (8)	2.288 (7, 8)	0.135

Supplementary table 226. Multivariable regression of WLGT score (AQP4+ NMOSD only)

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
HADS-D*	-1.310 (0.536)	-2.443	0.026
SILs present	1.385 (4.455)	0.311	0.760

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.173	9.08 (17)	2.985 (2, 17)	0.077

\*p ≤ 0.05

Supplementary table 227. Multivariable regression of Stroop interference score (AQP4+ NMOSD only)

a. Values of regression coefficients

Independent variable	$\beta$ (SE)	T statistic	p
Education*	2.519 (1.063)	2.369	0.034
SILs present	1.372 (6.934)	0.198	0.846

b. Assessment of model

Adj R <sup>2</sup>	RSE (DoF)	F statistic (DoF)	P (F statistic)
0.207	9.079 (13)	2.952 (2, 13)	0.088

\*p ≤ 0.05

Supplementary table 228. Odds ratio of supratentorial inflammatory lesions in paediatric- vs adult-onset AQP4+ NMOSD

	Supratentorial lesions	
	Absent	Present
Paediatric onset	1	4
Adult onset	18	4

OR = 15.51, p = 0.017

**Supplementary table 229. Roles of cytokines induced by  
ChAdOx1S in MOGAD**

Cytokine increased following ChAdOx1S	Downstream effects	References
IFN $\gamma$	<p>Activates Th1 cells, cytotoxic T cells and NK cells</p> <p>Upregulating MHC I and MHC II <math>\uparrow</math> antigen presentation to cytotoxic T cells and T helper cells and enhances T cell-B cell co-stimulation</p> <p>Activates macrophages <math>\uparrow</math> expression of IgG Fc receptors and releases IL-1<math>\beta</math>, IL-6 and TNF<math>\alpha</math> <math>\rightarrow</math> positive feedback loop between T cells and macrophages (sustains inflammation)</p> <p>Upregulates leucocyte adhesion molecules on BBB <math>\rightarrow</math> infiltration by CD4+ T cells, monocyte/macrophages &amp; NK cells</p> <p>Direct toxic effects on oligodendrocytes</p>	Popko <i>et al.</i> , 1997
TNF $\alpha$	<p>Promotes macrophage differentiation to an M1 (pro-inflammatory) phenotype</p> <p>Activates dendritic cells <math>\rightarrow</math> B cell activation</p> <p>Stimulates B cell proliferation and immunoglobulin production</p> <p>Induces IL-6 <math>\rightarrow</math> positive feedback cycle with IL-1<math>\beta</math></p> <p>Direct oligodendrocyte toxicity</p>	<p>Sedger &amp; McDermott, 2014</p> <p>Popko <i>et al.</i>, 1997</p>
IL-6	<p>Promotes differentiation of plasma cells</p> <p>Inhibits differentiation of Tregs</p> <p>Promotes differentiation of cytotoxic T cells, Th17 and T follicular helper cells</p> <p>Increases expression of adhesion molecules by endothelial cells</p> <p>Macrophage activation</p> <p>Part of positive feedback loop with TNF<math>\alpha</math> &amp; IL-17</p>	<p>Tanaka <i>et al.</i>, 2014</p> <p>Hirano, 2020</p> <p>Erta <i>et al.</i>, 2012</p>
IL-1 $\beta$	<p>Chemoattractant for granulocytes and T cells</p> <p>Drives monocyte differentiation into dendritic cells and M1 macrophages</p> <p>Stimulates B cell proliferation and plasma cell differentiation</p> <p>Promotes Th17 cell differentiation and activation</p>	<p>Gallozzi <i>et al.</i>, 2021</p> <p>Kaneko <i>et al.</i>, 2019</p>
IL-17	<p>Stimulate IL-1<math>\beta</math>, IL-6 and TNF<math>\alpha</math> <math>\rightarrow</math> positive feedback loop between innate immune system and Th17 response</p> <p>Enhance chemokine release</p> <p>Disrupt tight junctions at the BBB</p>	<p>Bettelli <i>et al.</i>, 2008</p> <p>Kebir <i>et al.</i>, 2007</p>
IL-21/22	<p>Stimulate IL-1<math>\beta</math>, IL-6 and TNF<math>\alpha</math> <math>\rightarrow</math> positive feedback loop</p> <p>Enhance chemokine release</p> <p>Stimulates B cell differentiation and class-switching</p> <p>Disrupt tight junctions at the BBB</p>	Bettelli <i>et al.</i> , 2008

