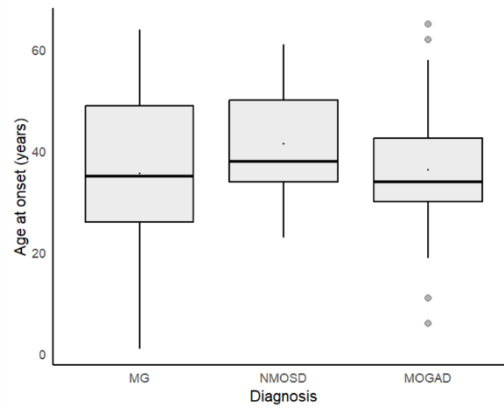
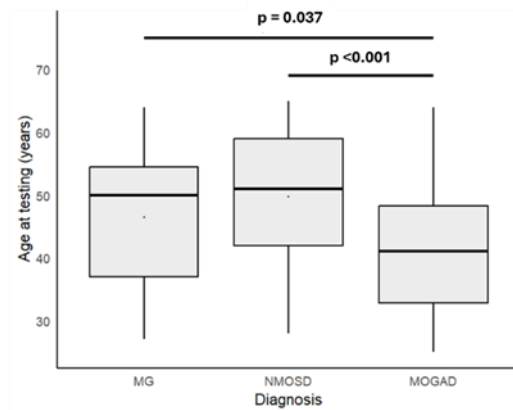


Supplementary figures

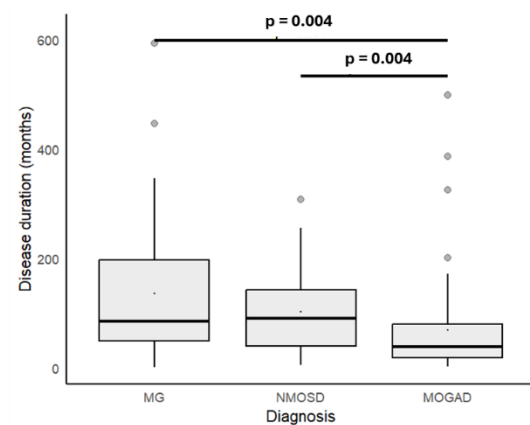
Supplementary figure 1. Boxplot of age at onset by diagnosis



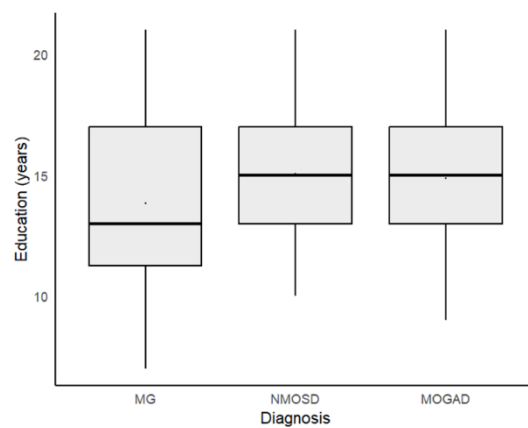
Supplementary figure 2. Boxplot of age at testing by diagnosis



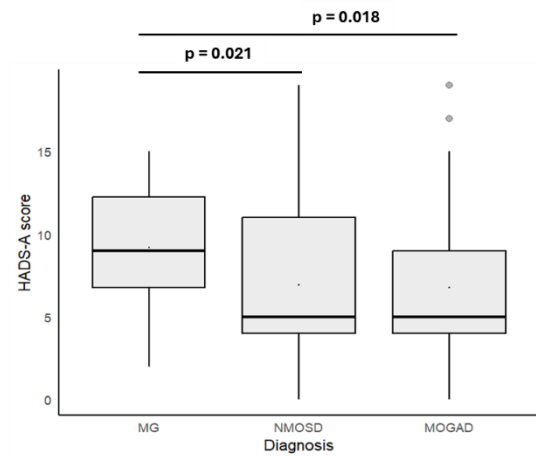
Supplementary figure 3. Boxplot of disease duration by diagnosis



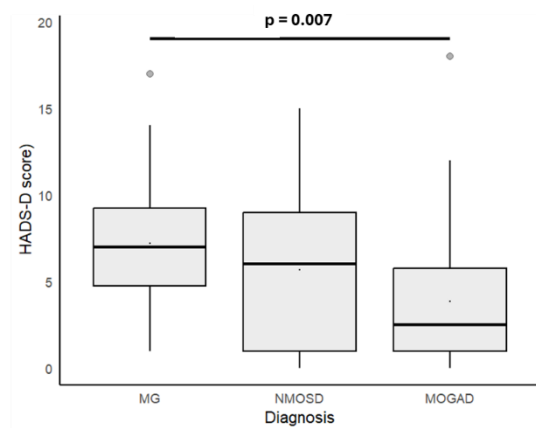
Supplementary figure 4. Boxplot of years of education by diagnosis



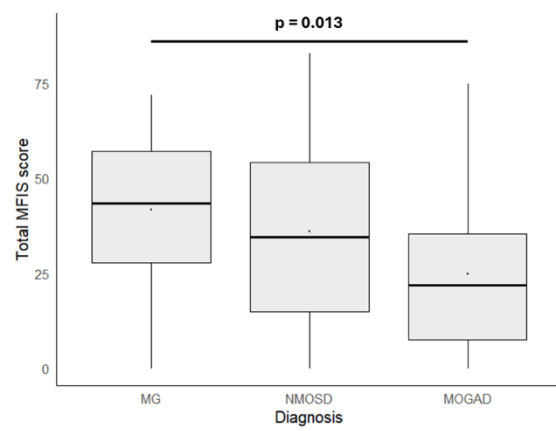
Supplementary figure 5. Boxplot of HADS-A scores by diagnosis



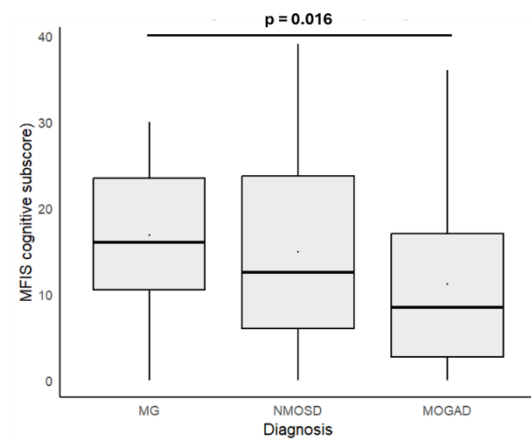
Supplementary figure 6. Boxplot HADS-D scores by diagnosis



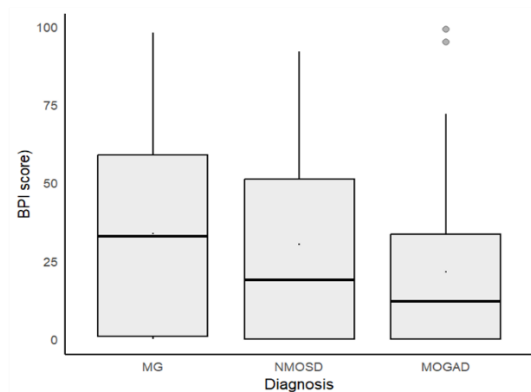
Supplementary figure 7. Boxplot of total MFIS scores by diagnosis



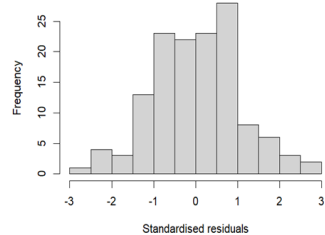
Supplementary figure 8. Boxplot of MFIS cognitive subscores by diagnosis



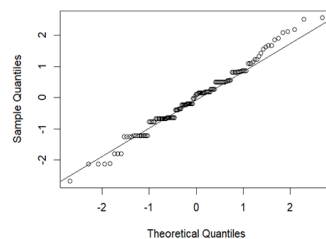
Supplementary figure 9. Boxplot of BPI scores by diagnosis



Supplementary figure 10. Univariable regression of $v(101 - \% \text{ MoCA score})$ against diagnosis

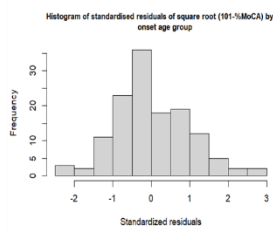


a. Histogram of standardised residuals for $v(101 - \% \text{ MoCA score})$ vs diagnosis

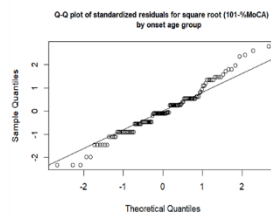


b QQ plot of standardised residuals for $v(101 - \% \text{ MoCA score})$ vs diagnosis

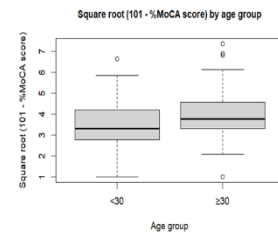
Supplementary figure 11. Univariable regression of $\sqrt{(101 - \% \text{ MoCA score})}$ against onset age group (<30 vs ≥ 30)



a. Histogram of standardised residuals for $\sqrt{(101 - \% \text{ MoCA score})}$ by onset age group

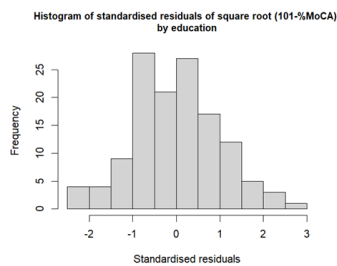


b. QQ plot of standardised residuals for $\sqrt{(101 - \% \text{ MoCA score})}$ by age at onset (paediatric vs adult)

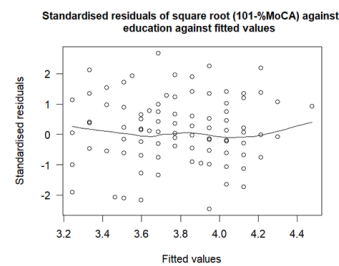


c. Box plot of $\sqrt{(101 - \% \text{ MoCA score})}$ by onset age group

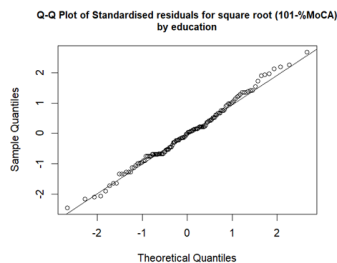
Supplementary figure 12. Univariable regression of $\sqrt{(101 - \% \text{ MoCA score})}$ against years in education



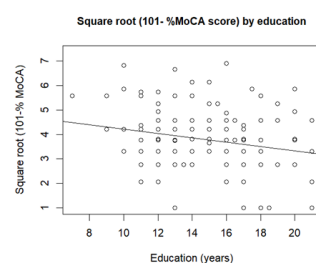
a. Histogram of standardised residuals for $\sqrt{(101 - \% \text{ MoCA score})}$ vs education (years)



b. Scatter plot of standardised residuals against predicted $\sqrt{(101 - \% \text{ MoCA score})}$

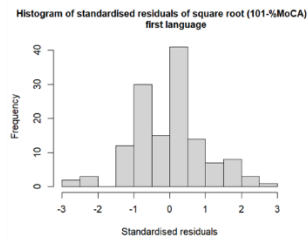


c. QQ plot of standardised residuals for $\sqrt{(101 - \% \text{ MoCA score})}$ vs education (years)

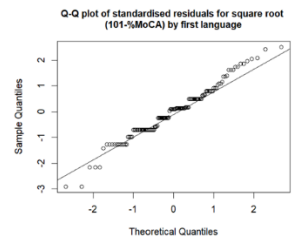


d. Scatter plot of $\sqrt{(101 - \% \text{ MoCA score})}$ by years in education

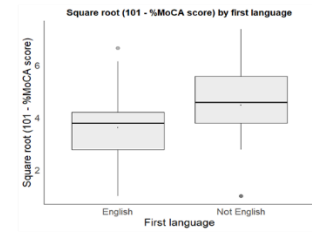
Supplementary figure 13. Univariable regression of $\sqrt{101 - \% \text{ MoCA score}}$ against first language (English vs not English)



a. Histogram of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs first language

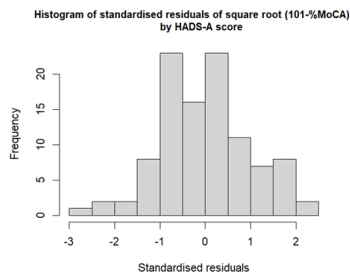


b. Q-Q plot of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs first language

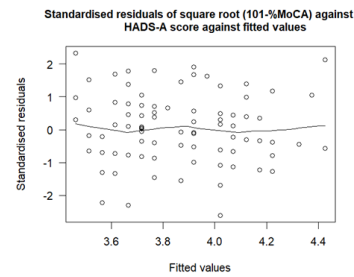


c. Box plot of $\sqrt{101 - \% \text{ MoCA score}}$ by first language

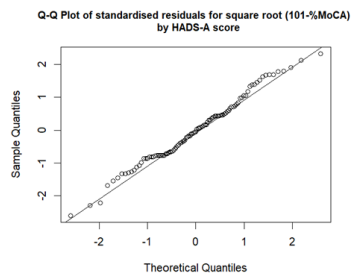
Supplementary figure 14. Univariable regression of $\sqrt{101 - \% \text{ MoCA score}}$ against HADS-A score



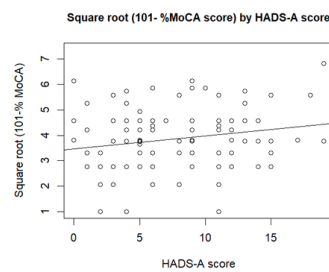
a. Histogram of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs HADS-A score



b. Scatter plot of standardised residuals against predicted $\sqrt{101 - \% \text{ MoCA score}}$

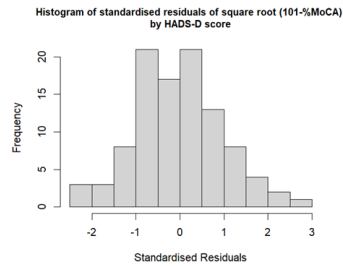


c. QQ plot of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs HADS-A score

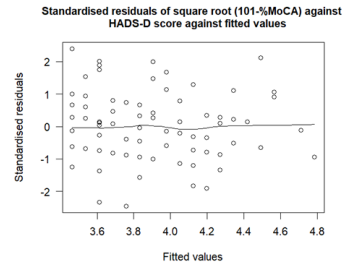


d. Scatter plot of $\sqrt{101 - \% \text{ MoCA score}}$ by HADS-A score

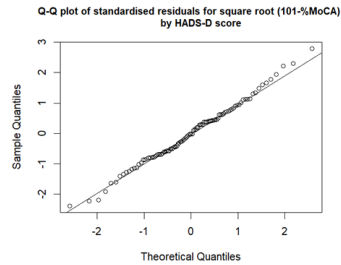
Supplementary figure 15. Univariable regression of $\sqrt{101 - \% \text{ MoCA score}}$ against HADS-D score



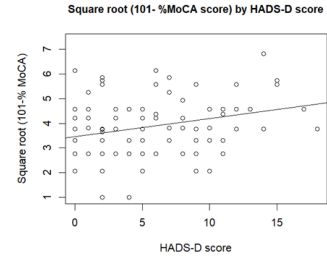
a. Histogram of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs HADS-D score



b. Scatter plot of standardised residuals against predicted $\sqrt{101 - \% \text{ MoCA score}}$

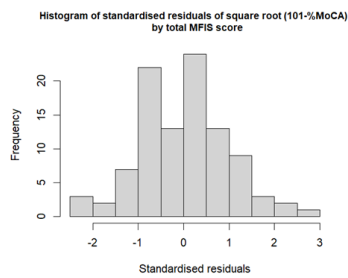


c. Q-Q plot of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs HADS-D score

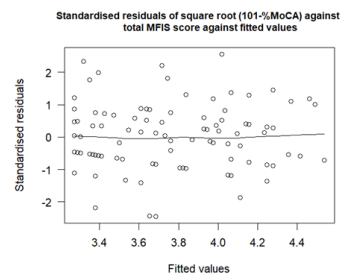


d. Scatter plot of for $\sqrt{101 - \% \text{ MoCA score}}$ by HADS-D score

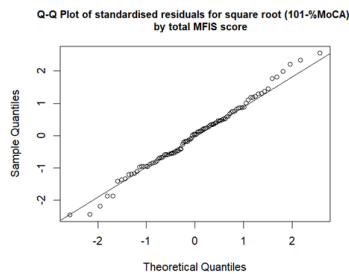
Supplementary figure 16. Univariable regression of $\sqrt{101 - \% \text{ MoCA score}}$ against total MFIS score



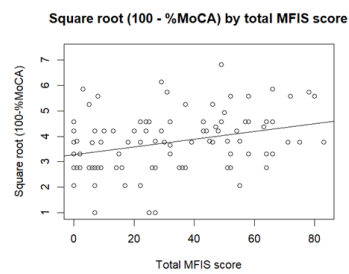
a. Histogram of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs total MFIS score



b. Scatter plot of standardised residuals against predicted $\sqrt{101 - \% \text{ MoCA score}}$

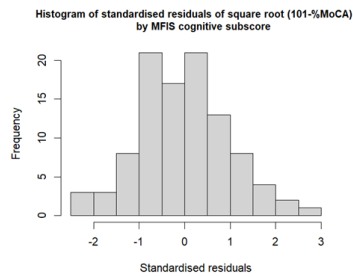


c. Q-Q plot of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs total MFIS score

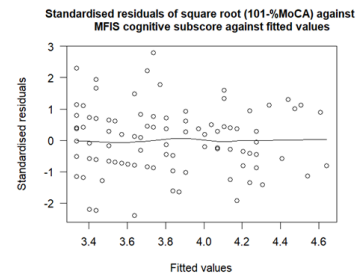


d. Scatter plot of for $\sqrt{101 - \% \text{ MoCA score}}$ by total MFIS score

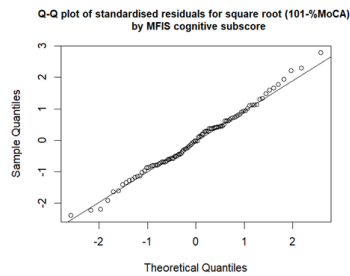
Supplementary figure 17. Univariable regression of $\sqrt{101 - \% \text{ MoCA score}}$ against MFIS cognitive subscore



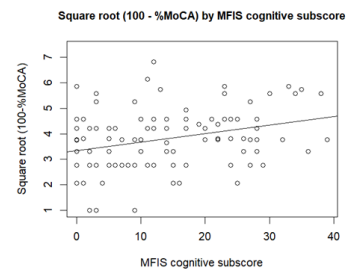
a. Histogram of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs MFIS cognitive subscore



b. Scatter plot of standardised residuals against predicted $\sqrt{101 - \% \text{ MoCA score}}$

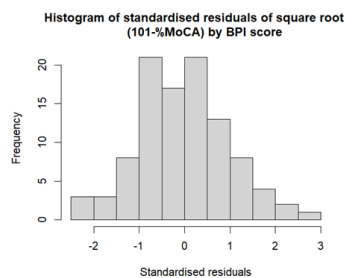


c. Q-Q plot of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs MFIS cognitive subscore

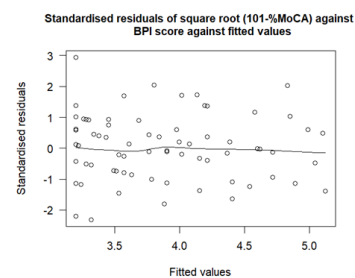


d. Scatter plot of $\sqrt{101 - \% \text{ MoCA score}}$ by MFIS cognitive subscore

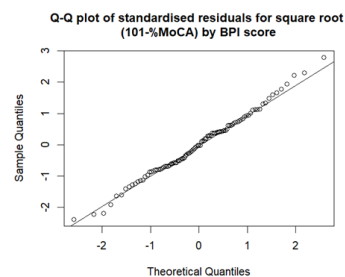
Supplementary figure 18. Univariable regression of $\sqrt{(101 - \% \text{ MoCA score})}$ against BPI score



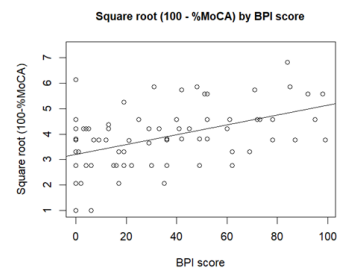
a. Histogram of standardised residuals for $\sqrt{(101 - \% \text{ MoCA score})}$ vs BPI score



b. Scatter plot of standardised residuals against predicted $\sqrt{(101 - \% \text{ MoCA score})}$



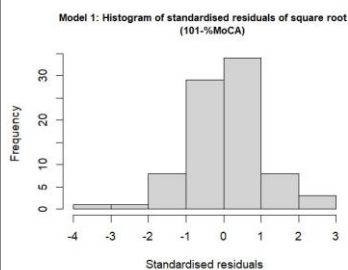
c. Q-Q plot of standardised residuals for $\sqrt{(101 - \% \text{ MoCA score})}$ vs BPI score



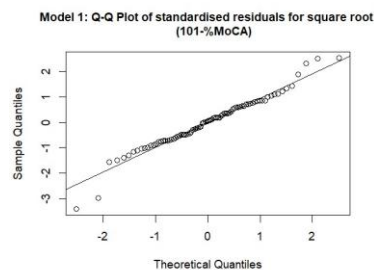
d. Scatter plot of for $\sqrt{(101 - \% \text{ MoCA score})}$ by BPI score

Supplementary figure 19. Multivariable regression of transformed %MoCA scores, model 1

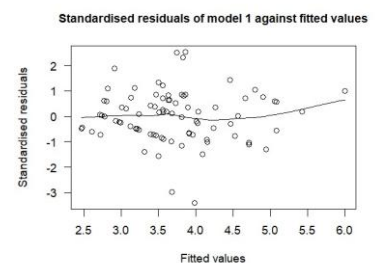
Independent variables: Diagnosis, onset age group, first language, education, HADSA score, HADSD score, total MFIS score, BPI score



a. Histogram of standardised residuals for model 1



b. Q-Q plot of standardised residuals for model 1

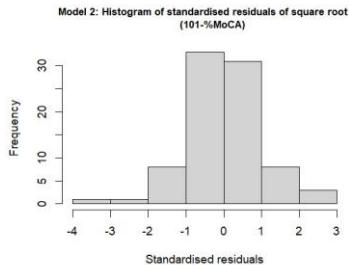


c. Scatter plot of standardised residuals for model 1

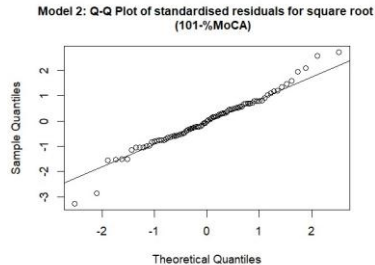
Model 1 met assumptions of linearity and normality and homoscedasticity of the standardised residuals.

Supplementary figure 20. Multivariable regression of transformed %MoCA scores, model 2

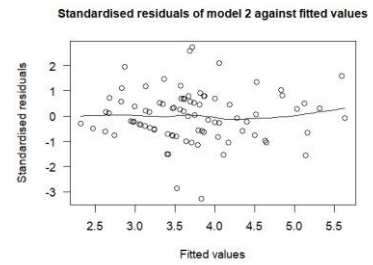
Independent variables: Diagnosis, onset age group, first language, education, HADSA score, HADS-D score, MFIS cognitive subscore, BPI score



a. Histogram of standardised residuals for model 2



b. QQ plot of standardised residuals for model 2

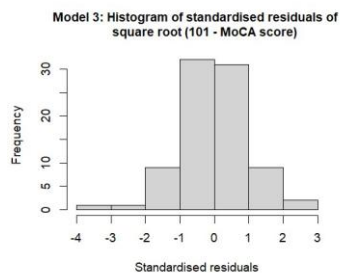


c. Scatter plot of standardised residuals for model 2

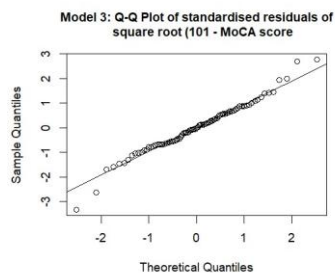
Model 2 met assumptions of linearity and normality and homoscedasticity of the standardised residuals.

Supplementary figure 21. Multivariable regression of transformed %MoCA scores, model 3

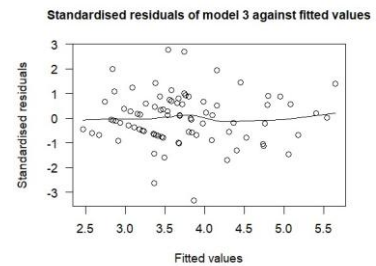
Independent variables: Diagnosis, first language, education, MFIS cognitive subscore, BPI score



a. Histogram of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ in multivariable model 3



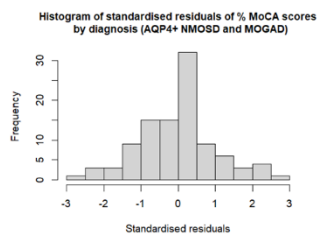
b. QQ plot of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ in multivariable model 3



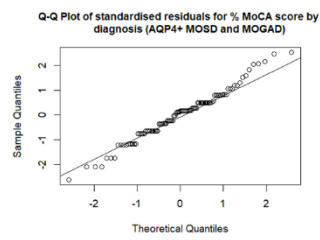
c. Scatter plot of standardised residuals against predicted $\sqrt{101 - \% \text{ MoCA score}}$ for multivariable model 3

Model 3 met assumptions of linearity and normality and homoscedasticity of the standardised residuals.

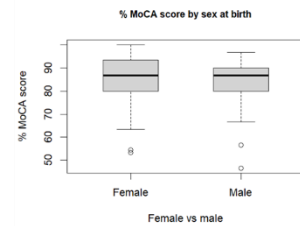
Supplementary figure 22. Linear regression of %MoCA score by diagnosis (AQP4+ NMOSD and MOGAD only)



a. Histogram of standardised residuals for MoCA scores by diagnosis

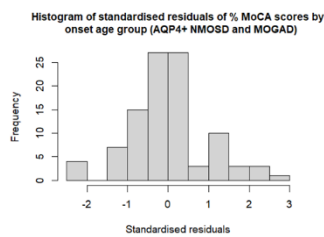


b. QQ plot of standardised residuals for MoCA scores by diagnosis

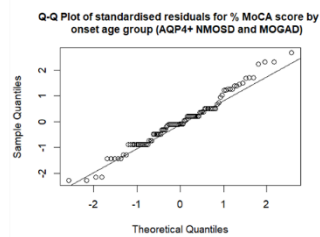


c. Boxplot of MoCA score by diagnosis

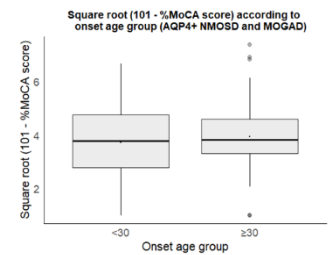
Supplementary figure 23. Linear regression of %MoCA score by onset age group (AQP4+ NMOSD and MOGAD only)



a. Histogram of standardised residuals for MoCA scores by onset age group

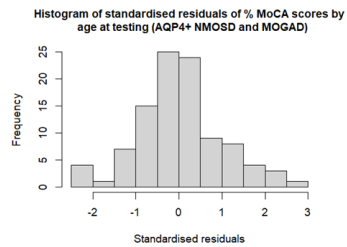


b. QQ plot of standardised residuals for MoCA scores by onset age group

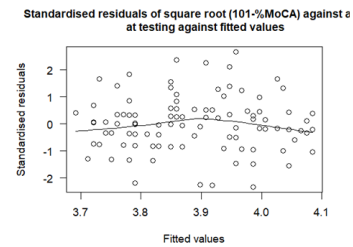


c. Boxplot of MoCA score by onset age group

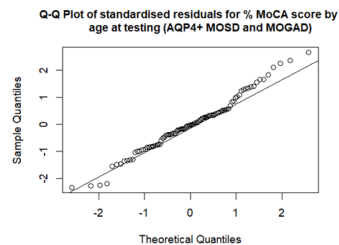
Supplementary figure 24. Univariable regression of $\sqrt{101 - \% \text{ MoCA score}}$ by age at testing (AQP4+ NMOSD and MOGAD only)



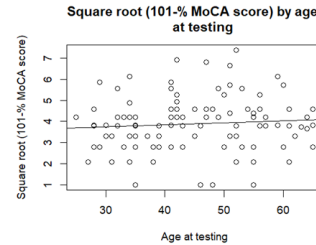
a. Histogram of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs age at testing



b. Scatter plot of standardised residuals against predicted $\sqrt{101 - \% \text{ MoCA score}}$



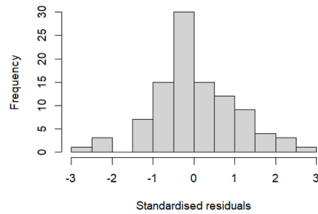
c. Q-Q plot of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs age at testing



d. Scatter plot of for $\sqrt{101 - \% \text{ MoCA score}}$ by age at testing

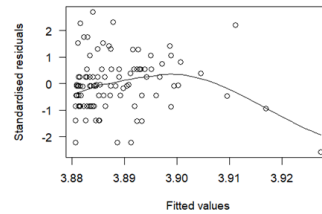
Supplementary figure 25. Univariable regression of $\sqrt{101 - \% \text{ MoCA score}}$ by disease duration (AQP4+ NMOSD and MOGAD only)

Histogram of standardised residuals of $\% \text{ MoCA}$ scores by disease duration (AQP4+ NMOSD and MOGAD)



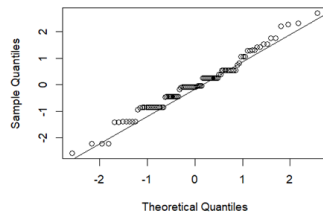
a. Histogram of standardised residuals for $\sqrt{101 - \% \text{ MoCA}}$ score) disease duration

Standardised residuals of square root ($101 - \% \text{ MoCA}$) against disease duration against fitted values



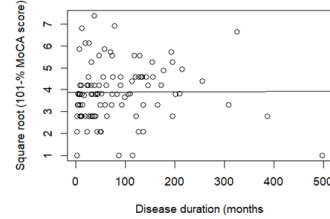
b. Scatter plot of standardised residuals against predicted $\sqrt{101 - \% \text{ MoCA}}$ score)

Q-Q Plot of standardised residuals for $\% \text{ MoCA}$ score by disease duration (AQP4+ MOSD and MOGAD)



c. QQ plot of standardised residuals for $\sqrt{101 - \% \text{ MoCA}}$ score) vs disease duration

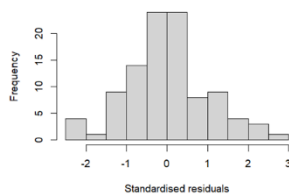
Square root ($101 - \% \text{ MoCA}$ score) by disease duration



d. Scatter plot of for $\sqrt{101 - \% \text{ MoCA}}$ score) by disease duration

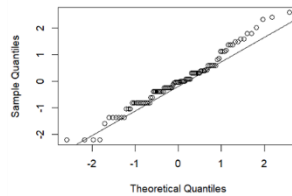
Supplementary figure 26. Linear regression of $\% \text{ MoCA}$ score by sex at birth (AQP4+ NMOSD and MOGAD only)

Histogram of standardised residuals of $\% \text{ MoCA}$ scores by sex at birth (AQP4+ NMOSD and MOGAD)



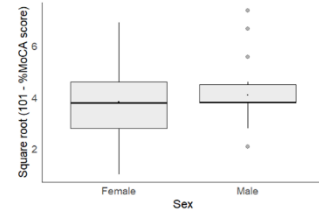
a. Histogram of standardised residuals for $\% \text{ MoCA}$ scores by sex at birth

Q-Q Plot of standardised residuals for $\% \text{ MoCA}$ score by sex at birth (AQP4+ NMOSD and MOGAD)



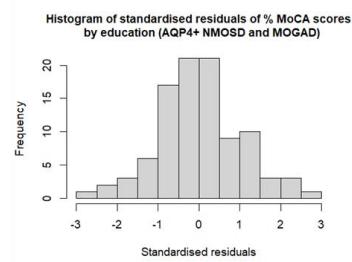
b. QQ plot of standardised residuals for $\% \text{ MoCA}$ scores by sex at birth

Square root ($101 - \% \text{ MoCA}$ score) according to onset age group (AQP4+ NMOSD and MOGAD)

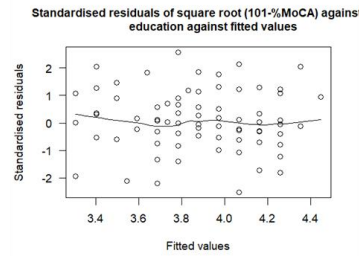


c. Boxplot of $\% \text{ MoCA}$ score by sex at birth

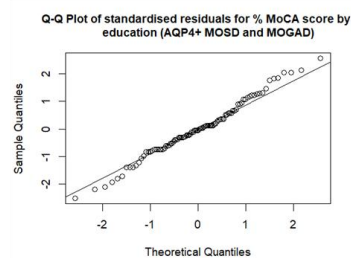
Supplementary figure 27. Univariable regression of $\sqrt{101 - \% \text{ MoCA score}}$ against education (AQP4+ NMOSD and MOGAD only)



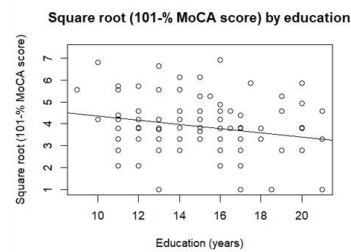
a. Histogram of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs education



b. Scatter plot of standardised residuals against predicted $\sqrt{101 - \% \text{ MoCA score}}$

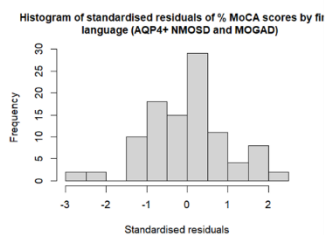


c. QQ plot of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs education

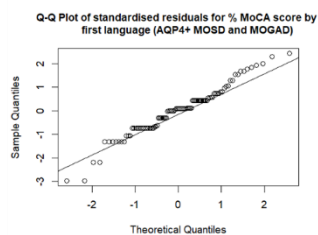


d. Scatter plot of $\sqrt{101 - \% \text{ MoCA score}}$ by education

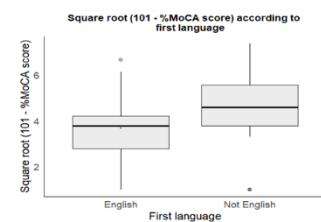
Supplementary figure 28. Linear regression of $\% \text{ MoCA score}$ against first language (AQP4+ NMOSD and MOGAD only)



a. Histogram of standardised residuals for MoCA scores by first language

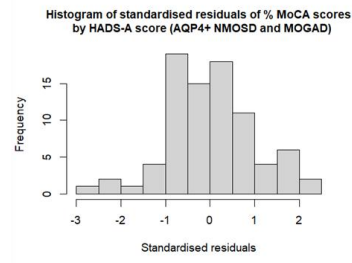


b. QQ plot of standardised residuals for MoCA scores by first language

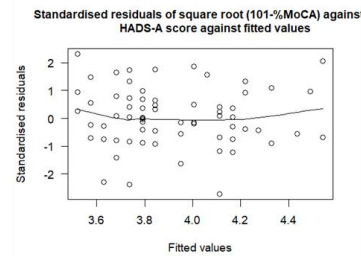


c. Boxplot of MoCA score by first language

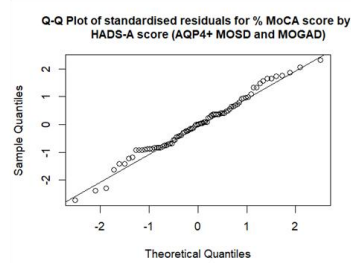
Supplementary figure 29. Univariable regression of $\sqrt{(101 - \% \text{ MoCA score})}$ against HADS-A score (AQP4+ NMOSD and MOGAD only)



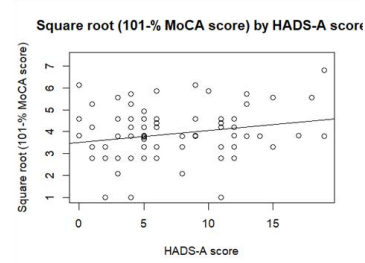
a. Histogram of standardised residuals for $\sqrt{(101 - \% \text{ MoCA score})}$ vs HADS-A score



b. Scatter plot of standardised residuals against predicted $\sqrt{(101 - \% \text{ MoCA score})}$

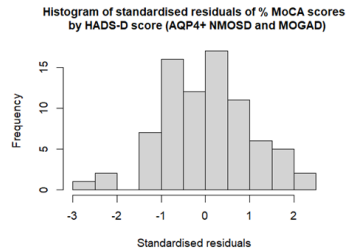


c. Q-Q plot of standardised residuals for $\sqrt{(101 - \% \text{ MoCA score})}$ vs HADS-A score

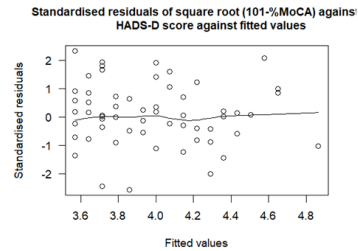


d. Scatter plot of $\sqrt{(101 - \% \text{ MoCA score})}$ by HADS-A score

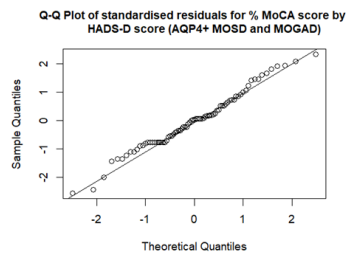
Supplementary figure 30. Univariable regression of $\sqrt{101 - \% \text{ MoCA score}}$ against HADS-D score (AQP4+ NMOSD and MOGAD only)



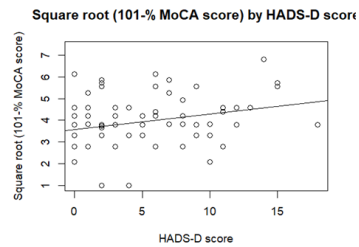
a. Histogram of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs HADS-D score



b. Scatter plot of standardised residuals against predicted $\sqrt{101 - \% \text{ MoCA score}}$

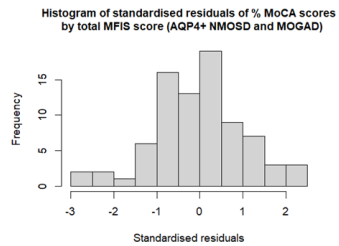


c. QQ plot of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs HADS-D score

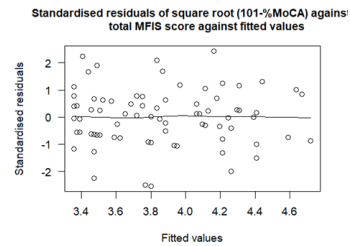


d. Scatter plot of for $\sqrt{101 - \% \text{ MoCA score}}$ by HADS-D score

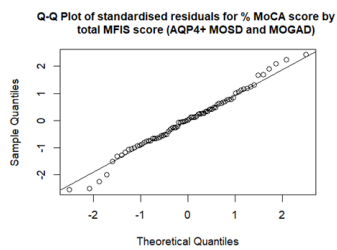
Supplementary figure 31. Univariable regression of $\sqrt{(101 - \% \text{ MoCA score})}$ against total MFIS score (AQP4+ NMOSD and MOGAD only)



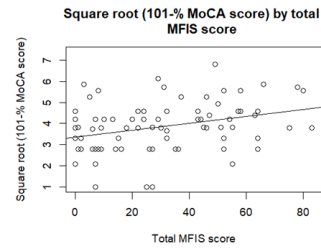
a. Histogram of standardised residuals for $\sqrt{(101 - \% \text{ MoCA score})}$ vs total MFIS score



b. Scatter plot of standardised residuals against predicted $\sqrt{(101 - \% \text{ MoCA score})}$

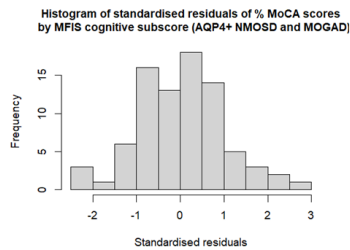


c. Q-Q plot of standardised residuals for $\sqrt{(101 - \% \text{ MoCA score})}$ vs total MFIS score

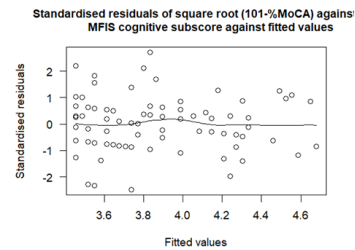


d. Scatter plot of $\sqrt{(101 - \% \text{ MoCA score})}$ by total MFIS score

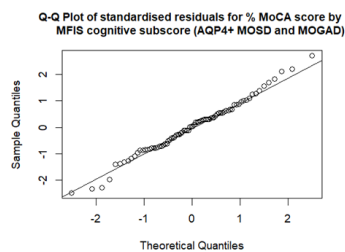
Supplementary figure 32. Univariable regression of $\sqrt{(101 - \% \text{ MoCA score})}$ against MFIS cognitive subscore (AQP4+ NMOSD and MOGAD only)



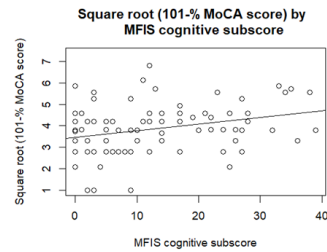
a. Histogram of standardised residuals for $\sqrt{(101 - \% \text{ MoCA score})}$ vs MFIS cognitive subscore



b. Scatter plot of standardised residuals against predicted $\sqrt{(101 - \% \text{ MoCA score})}$

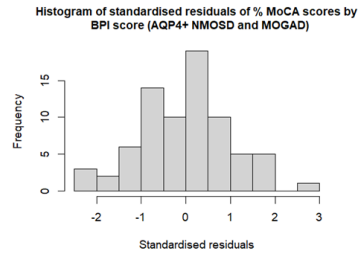


c. QQ plot of standardised residuals for $\sqrt{(101 - \% \text{ MoCA score})}$ vs MFIS cognitive subscore

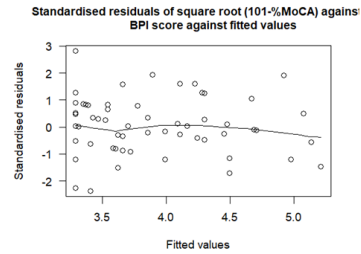


d. Scatter plot of for $\sqrt{(101 - \% \text{ MoCA score})}$ by MFIS cognitive subscore

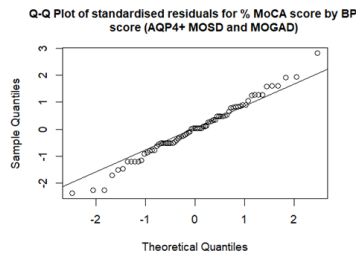
Supplementary figure 33. Univariable regression of $\sqrt{101 - \% \text{ MoCA score}}$ against BPI score (AQP4+ NMOSD and MOGAD only)



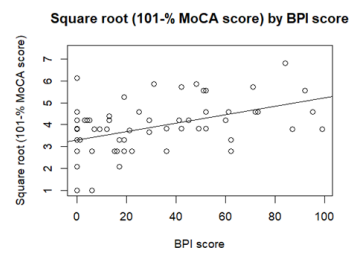
a. Histogram of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs BPI score



b. Scatter plot of standardised residuals against predicted $\sqrt{101 - \% \text{ MoCA score}}$

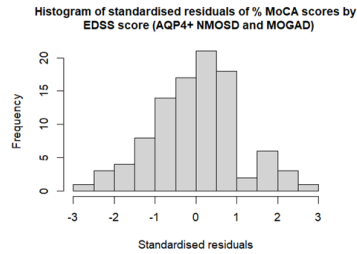


c. QQ plot of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs BPI score

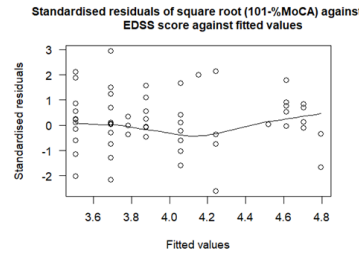


d. Scatter plot of $\sqrt{101 - \% \text{ MoCA score}}$ by BPI score

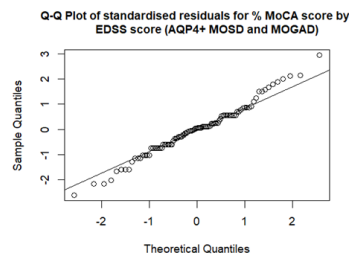
Supplementary figure 34. Univariable regression of $\sqrt{101 - \% \text{ MoCA score}}$ against EDSS score (AQP4+ NMOSD and MOGAD only)



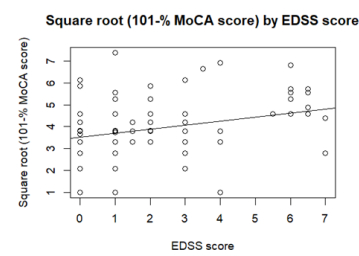
a. Histogram of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs EDSS score



b. Scatter plot of standardised residuals against predicted $\sqrt{101 - \% \text{ MoCA score}}$

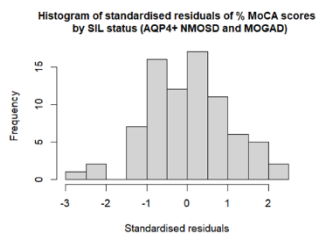


c. QQ plot of standardised residuals for $\sqrt{101 - \% \text{ MoCA score}}$ vs EDSS score

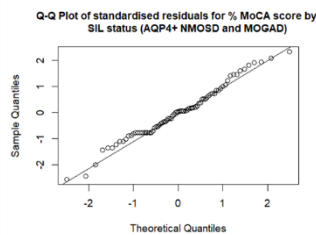


d. Scatter plot of $\sqrt{101 - \% \text{ MoCA score}}$ by EDSS score

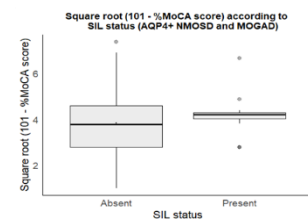
Supplementary figure 35. Linear regression of $\% \text{ MoCA score}$ against SIL status (AQP4+ NMOSD and MOGAD only)



a. Histogram of standardised residuals for MoCA scores by SIL status

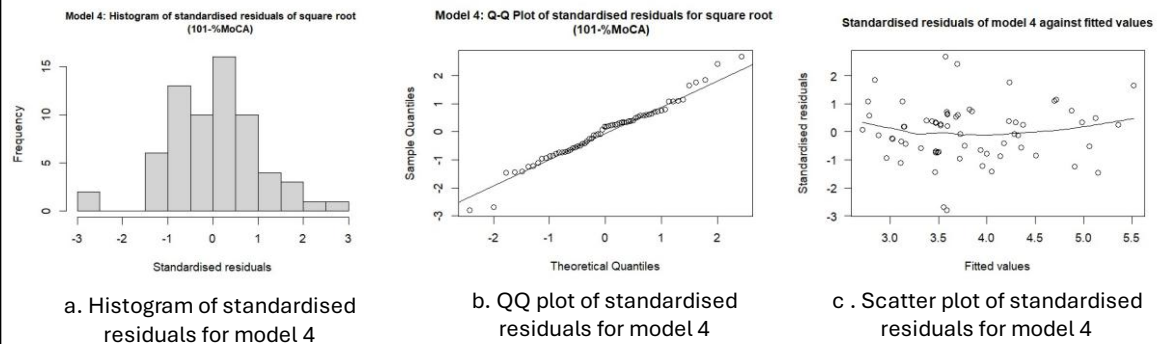


b. QQ plot of standardised residuals for MoCA scores by SIL status



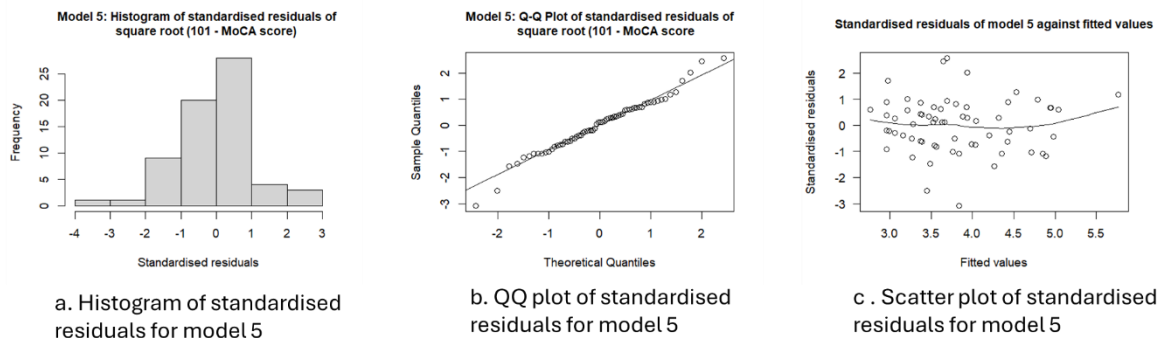
c. Boxplot of MoCA score by SIL status

Supplementary figure 36. Multivariable regression of transformed %MoCA scores, model 4



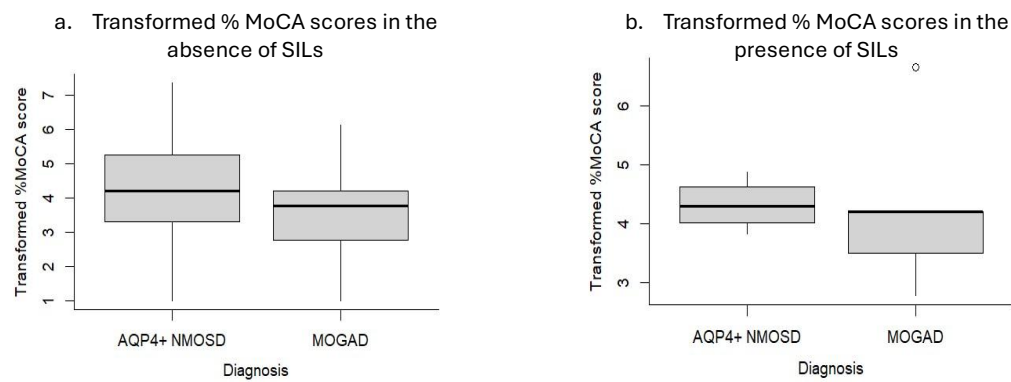
Model 4 met assumptions of linearity and normality and homoscedasticity of the standardised residuals.

Supplementary figure 37. Multivariable regression of transformed %MoCA scores, model 5

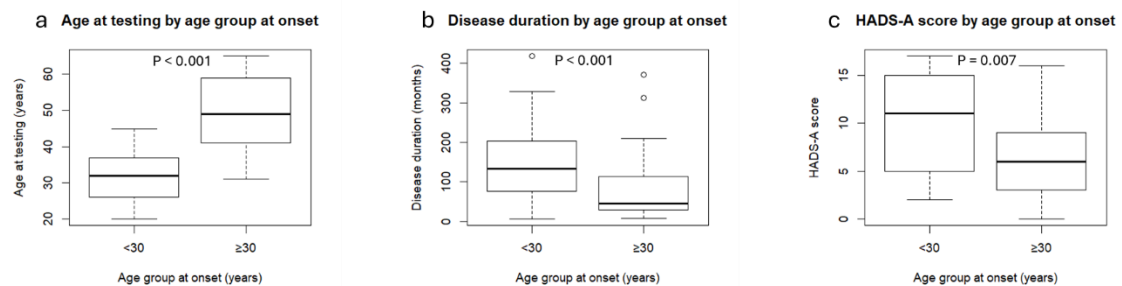


Model 5 met assumptions of linearity and normality and homoscedasticity of the standardised residuals.

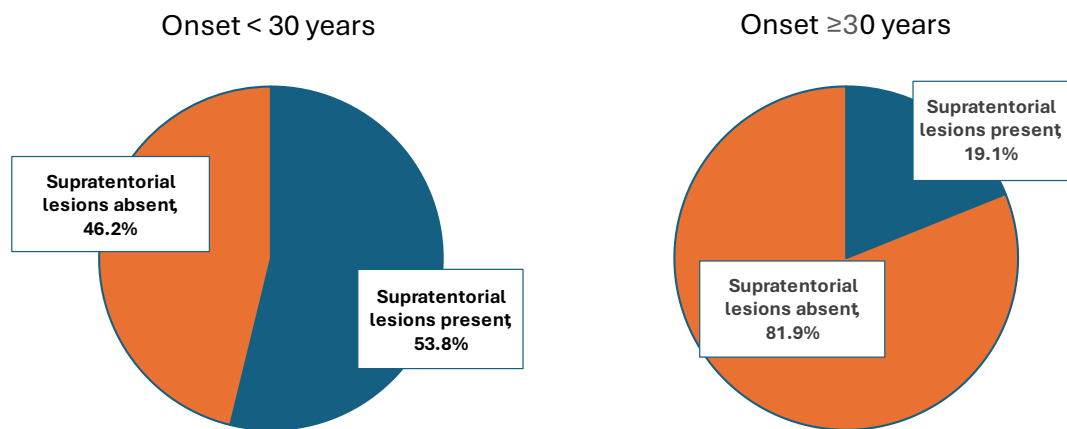
Supplementary figure 38. Transformed %MoCA score by diagnosis in the presence and absence of SILs



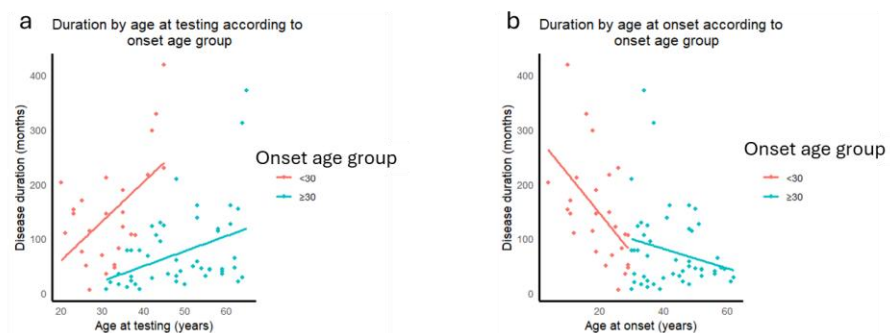
Supplementary figure 39a – c. Boxplots of significant differences according to onset age group (AQP4+ NMOSD and MOGAD)



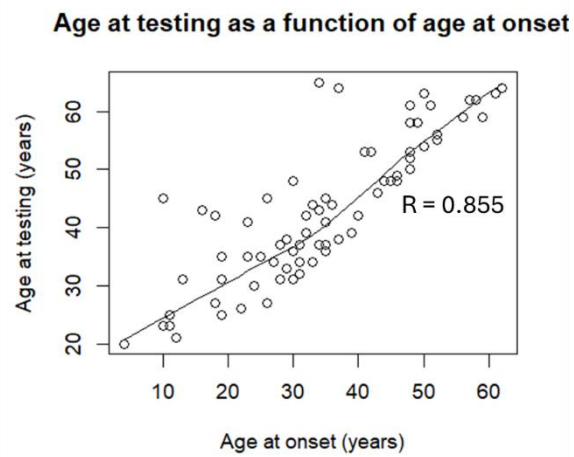
Supplementary figure 40. Proportion of patients with and without supratentorial inflammatory lesions according to onset age group (AQP4+ NMOSD and MOGAD)



Supplementary figure 41: Scatter plot of disease duration against age at testing (a) and age at onset (b)

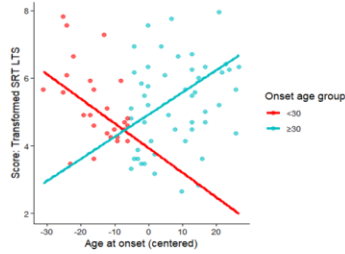


Supplementary figure 42. Relationship between age at onset and age at testing (AQP4+ NMOSD and MOGAD only)

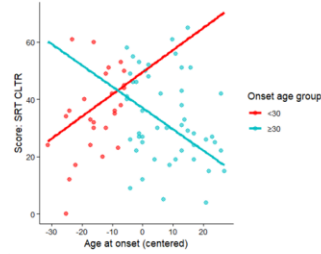


Supplementary figure 43. Effect of age at onset by onset age group after adjusting for age at testing

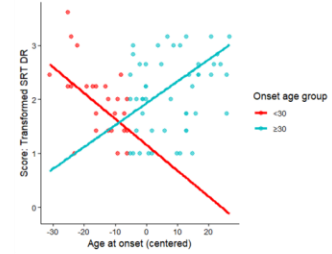
Transformed SRT-LTS score against age at onset after adjusting for age at testing and age group* age at testing interactions



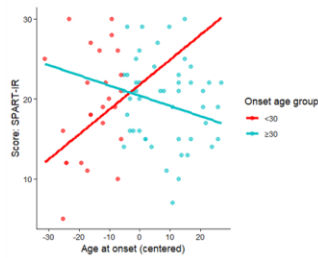
SRT-CLTR score against age at onset after adjusting for age at testing and age group* age at testing interactions



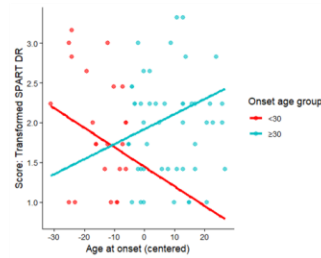
Transformed SRT-DR score against age at onset after adjusting for age at testing and age group* age at testing interactions



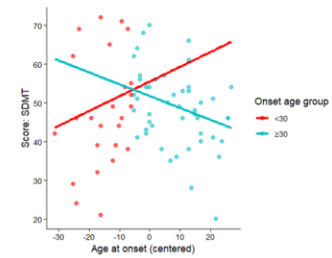
SPART-IR score against age at onset after adjusting for age at testing and age group* age at testing interactions



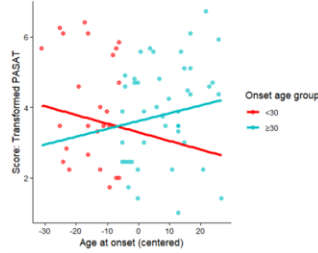
Transformed SPART-DR score against age at onset after adjusting for age at testing and age group* age at testing interactions



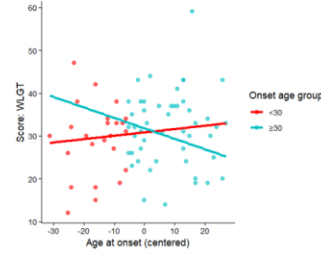
SDMT score against age at onset after adjusting for age at testing and age group* age at testing interactions



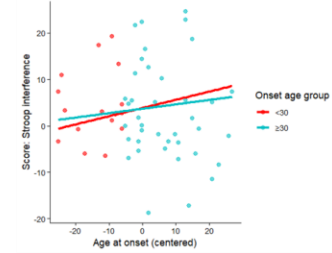
Transformed PASAT score against age at onset after adjusting for age at testing and age group* age at testing interactions



WLGT score against age at onset after adjusting for age at testing and age group* age at testing interactions

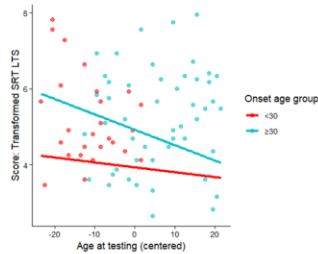


Stroop interference score against age at onset after adjusting for age at testing and age group* age at testing interactions

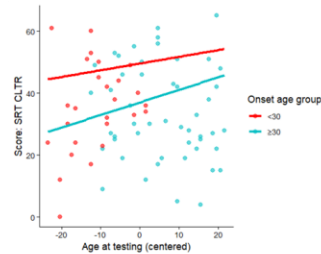


Supplementary figure 44. Effect of age at testing by onset age group after adjusting for age at onset

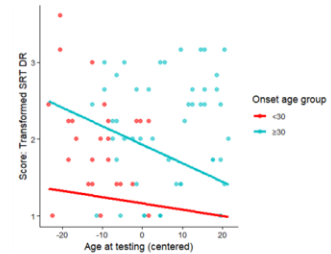
Transformed SRT-LTS score against age at testing after adjusting for age at onset and age group* age at onset interactions



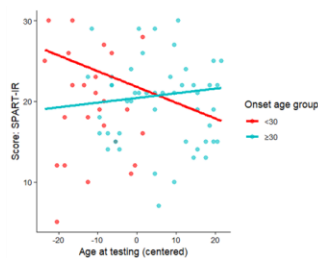
SRT-CLTR score against age at testing after adjusting for age at onset and age group* age at onset interactions



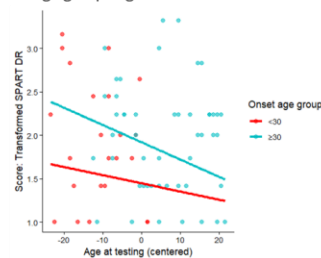
Transformed SRT-DR score against age at testing after adjusting for age at onset and age group* age at onset interactions



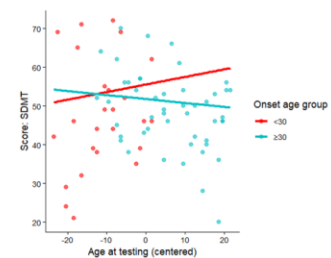
SPART-IR score against age at testing after adjusting for age at onset and age group* age at onset interactions



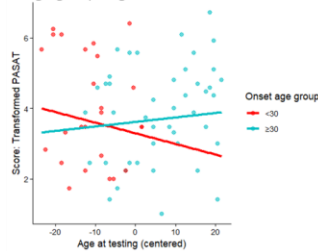
Transformed SPART-DR score against age at testing after adjusting for age at onset and age group* age at onset interactions



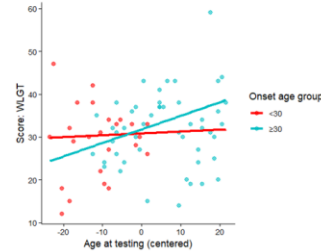
SDMT score against age at testing after adjusting for age at onset and age group* age at onset interactions



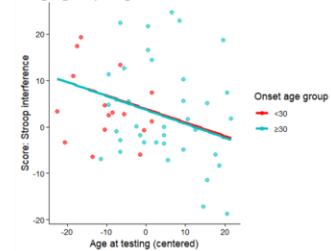
Transformed PASAT score against age at testing after adjusting for age at onset and age group* age at onset interactions



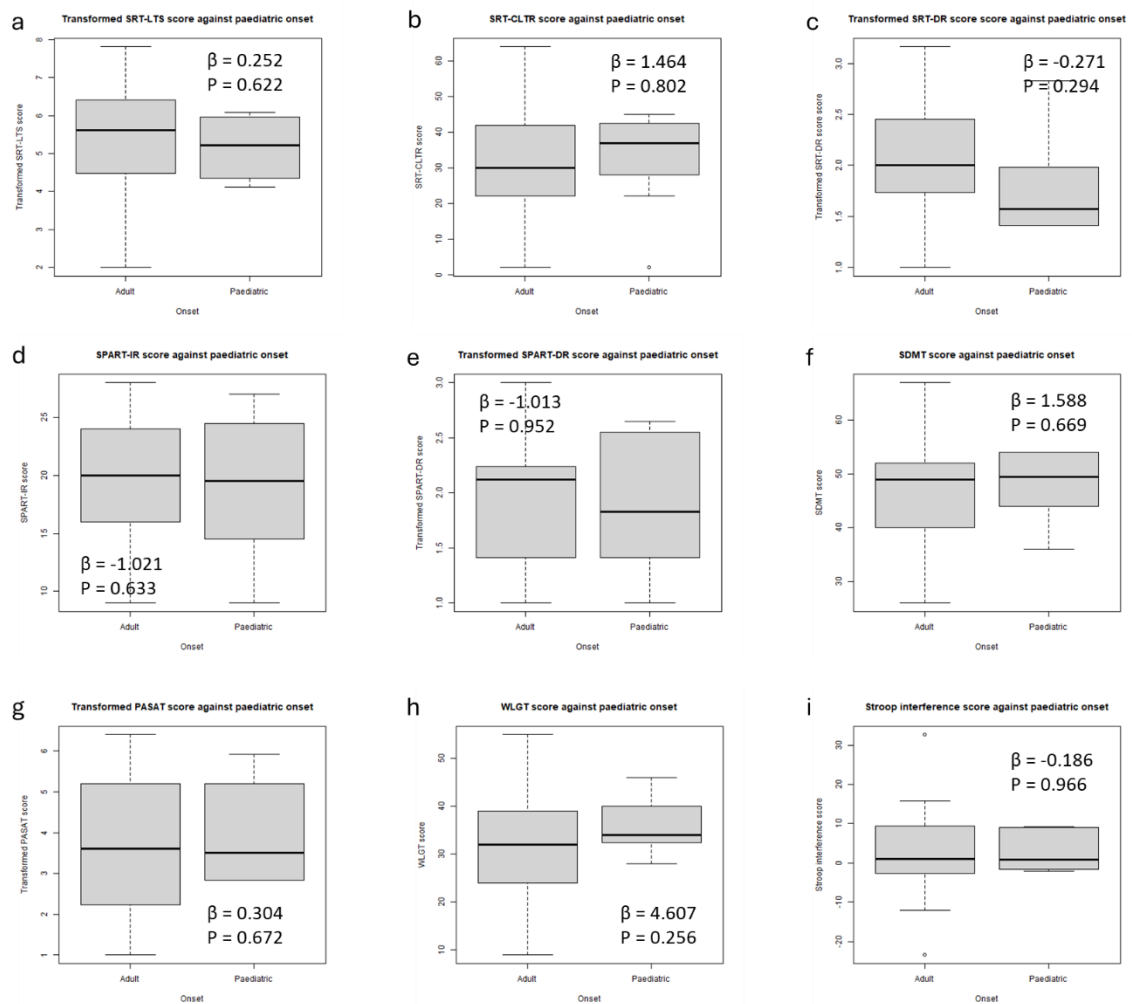
WLGT score against age at testing after adjusting for age at onset and age group* age at onset interactions



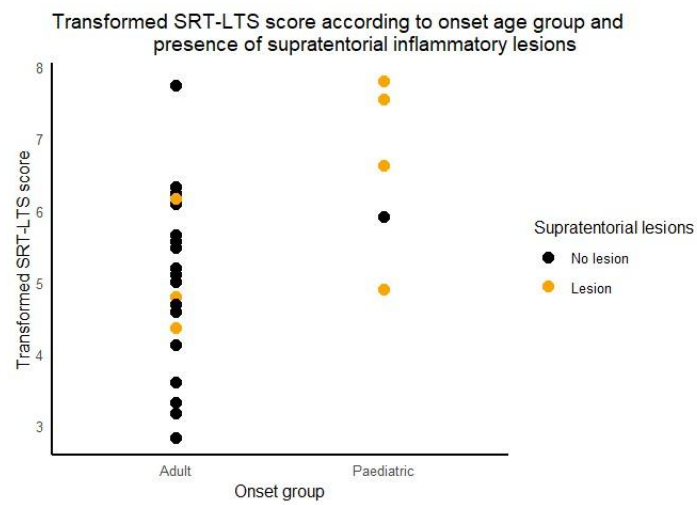
Stroop interference score against age at testing after adjusting for age at onset and age group* age at onset interactions



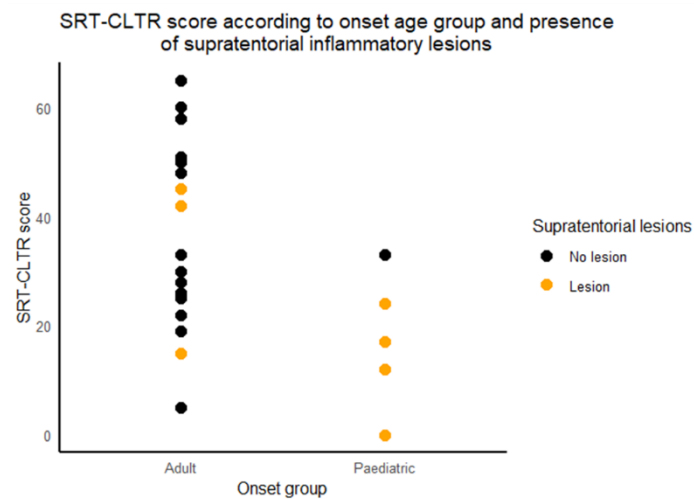
Supplementary figure 45. Effect of paediatric onset on test scores in myasthenia gravis



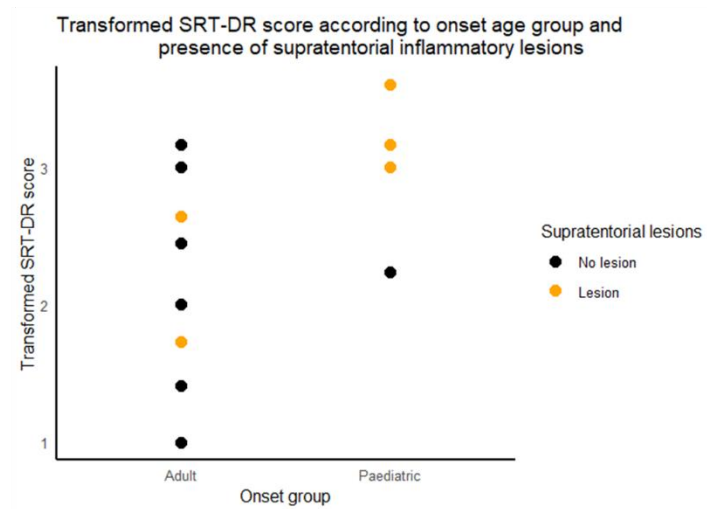
Supplementary figure 46. Scatter plot of transformed SRT-LTS scores in paediatric- and adult-onset AQP4+ NMOSD in presence and absence of SILs



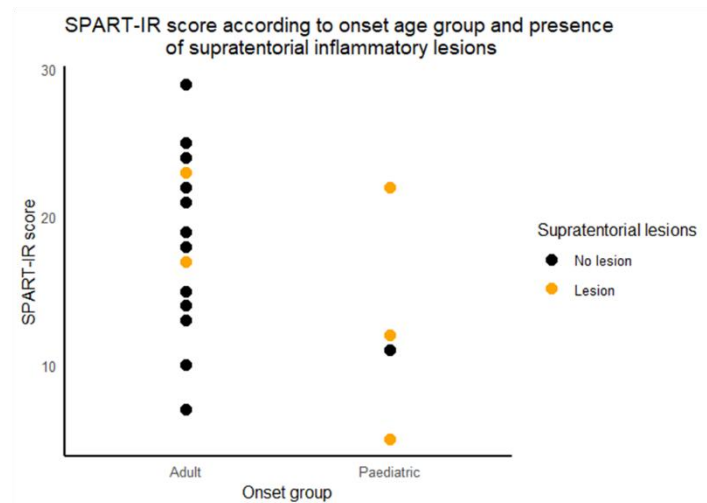
Supplementary figure 47. Scatter plot of SRT-CLTR scores in paediatric- and adult-onset AQP4+ NMOSD in presence and absence of SILs



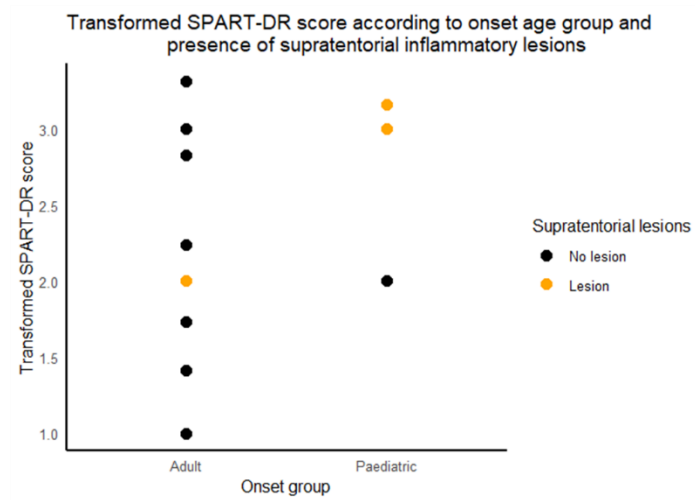
Supplementary figure 48. Scatter plot of transformed SRT-DR scores in paediatric- and adult-onset AQP4+ NMOSD in presence and absence of SILs



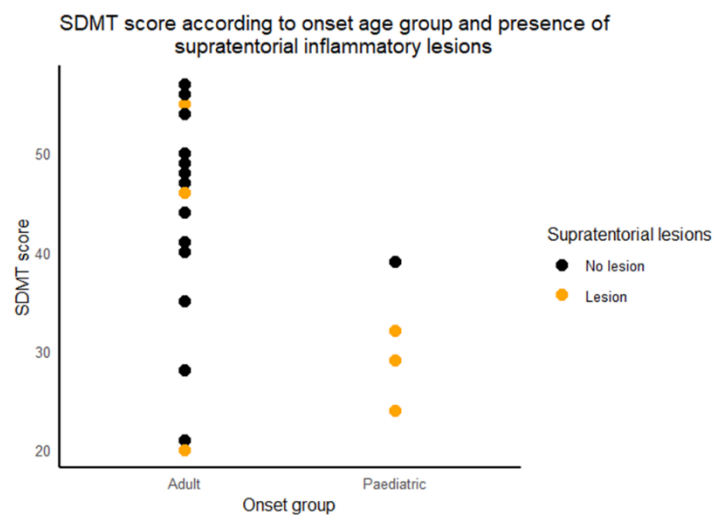
Supplementary figure 49. Scatter plot of SPART-IR scores in paediatric- and adult-onset AQP4+ NMOSD in presence and absence of SILs



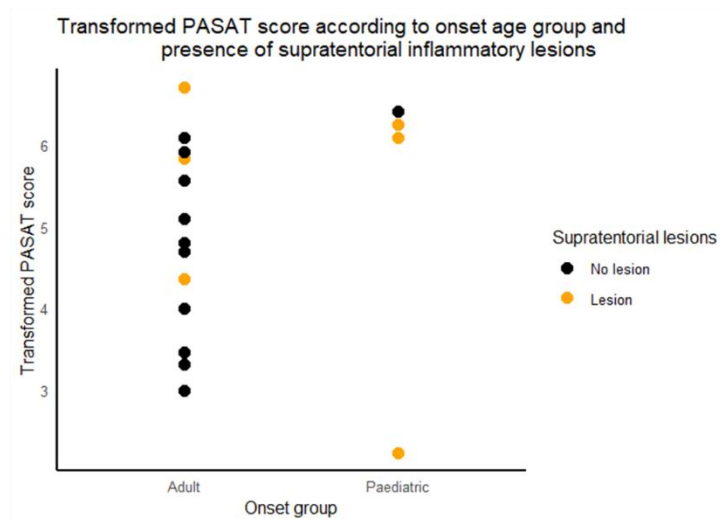
Supplementary figure 50. Scatter plot of transformed SPART-DR scores in paediatric- and adult-onset AQP4+ NMOSD in presence and absence of SILs



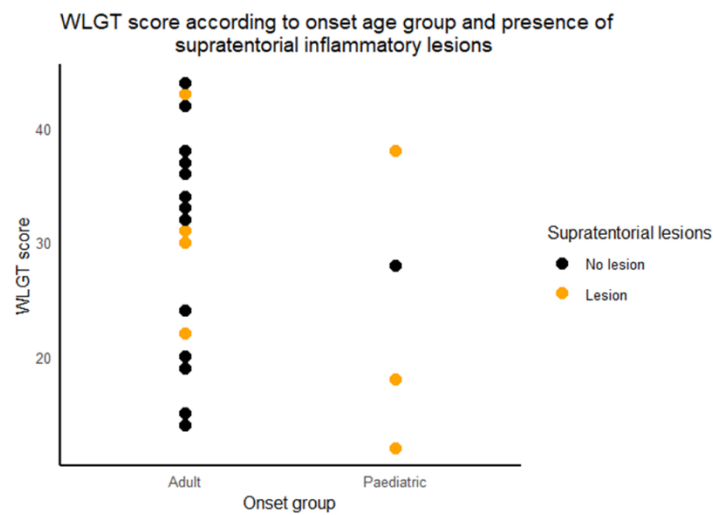
Supplementary figure 51. Scatter plot of SDMT scores in paediatric- and adult-onset AQP4+ NMOSD in presence and absence of SILs



Supplementary figure 52. Scatter plot of transformed PASAT scores in paediatric- and adult-onset AQP4+ NMOSD in presence and absence of SILs



Supplementary figure 53. Scatter plot of WLGT scores in paediatric- and adult-onset AQP4+ NMOSD in presence and absence of SILs



Supplementary figure 54. Scatter plot of Stroop interference scores in paediatric- and adult-onset AQP4+ NMOSD in presence and absence of SILs

