## #3090 Title:Different Measures of Behavioural Involvement in Amyotrophic Lateral Sclerosis Yield Varying Rates of Behavioural Change

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### Objectives/aims:

Amyotrophic Lateral Sclerosis (ALS), also known as Motor Neuron Disease (MND), is a progressive and life-limiting neurodegenerative disease which can involve behavioural change. There are five commonly reported disease-specific screening tools of behavioural change but it is not clear how they differ in applicability. This study therefore set out to investigate the extent to which these measures similarly identify impairment by examining i) intercorrelations between scores on the measures completed about the same people with ALS, and ii) the percentage of people with ALS characterised as impaired on each measure.

### Methods:

The behavioural component of the ALS-Cognitive Behavioural Screen (ALS-CBS-b), behavioural component of the Edinburgh Cognitive and Behavioural ALS Screen (ECAS-b), ALS-Frontotemporal Dementia Questionnaire (ALS-FTD-Q), Beaumont Behavioural Inventory (BBI), and MND Behavioural Instrument (MiND-B) were all completed by 35 carers of people with ALS. Total scores for each measure underwent Spearman correlation analysis. Classifications of impairment (for behavioural impairment or ALS-FTD) were determined using published cut-offs and agreement between measures was determined by calculating Cohen's kappa coefficients.

### Results:

The behavioural measures were significantly intercorrelated ($p<0.05$ in all cases) but with differing strengths of association. The association between the ALS-CBS-b and ALS-FTD-Q was weak to moderate ($r=0.41$) while other associations between the ALS-FTD-Q, MiND-B, BBI, and ALS-CBS-b were moderate to strong (0.53-0.75). While the ECAS-b was moderately associated with the BBI ($r=0.53$), the ECAS-b was only weakly to moderately associated with the ALS-CBS-b, MiND-B and ALS-FTD-Q (0.36-0.48). The association between ALS-CBS-b and ALS-FTD-Q scores ($r=0.41$) was similarly in the weak to moderate range. The ECAS-b and ALS-CBS-b had the weakest intercorrelation ($r=0.36$). Percentages of the sample classified with behavioural involvement by the measures ranged between 20.0% (ALS-FTD-Q) and 74.3% (MiND-B). Percentages of the sample classified with ALS-FTD by the measures ranged between 2.9% (ECAS-b) and 20% (ALS-CBS-b). Agreement of classification between measures (Cohen's kappa) was mostly fair to moderate (0.21-0.57) although generally better for classifications of ALS-FTD than for milder behavioural involvement. Between the ECAS-b and BBI there was complete agreement on the classification of ALS-FTD ($k = 1.0$).

### Conclusions:

Existing measures of behavioural change in people with ALS may yield very differing conclusions and cannot be assumed to be interchangeable. Variability in the detection of impairment between measures may result from differing item content, behaviours sampled or cut-off scores for impairment. This inconsistency between measures may lead to inappropriate healthcare provision and discrepancies in research conclusions.

Funding: MND Association