## Differentiation and Symptom Progression of bvFTD, svPPA, and nfvPPA Subtypes Using UDS-FTLD Module Behavior Measures

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**Introduction:** The ALLFTD Consortium has collected the most comprehensive longitudinal dataset of socioemotional behavior in early frontotemporal dementia (FTD) using the NACC FTLD Module (FTLD-MOD) tests. We examined baseline and longitudinal performances on FTLD-MOD behavior questionnaires (Social Norms Questionnaire (SNQ22), Social Behavior Observer Checklist (SBOCL), Behavioral Inhibition Scale (BIS), Interpersonal Reactivity Index (IRI), and the Revised Self-monitoring Scale (RSMS)) for diagnostic differentiation and measuring disease-related decline in socioemotional behavior.

**Methodology:** Test scores for 536 symptomatic ALLFTD participants (435 behavioral variant FTD (bvFTD), 106 semantic variant primary progressive aphasia (svPPA), 95 non-fluent PPA (nfvPPA)) and 475 neurologically healthy older controls from UCSF were compared using logistic regression modeling, longitudinal mixed effects modeling, and power analyses to estimate clinical trial sample sizes.

**Results:** Multiple logistic regression models combining all five questionnaires discriminated nfvPPA from svPPA (AUC=0.90), nfvPPA from bvFTD (AUC=0.87), and bvFTD from svPPA (AUC=0.81). The RSMS Sensitivity to Socioemotional Expressiveness subscale best discriminated nfvPPA from bvFTD (AUC=0.83) and nfvPPA from svPPA (AUC=0.79). Mixed models demonstrated significant within-cohort differences across CDR® plus NACC FTLD levels as well as between-cohort differences. Longitudinal mixed models showed differences in rates of decline within diagnostic groups, but with unexpected differences in baseline performance likely due to study artifact.

**Conclusion:** The FTLD-MOD behavior questionnaires provide strong diagnostic differentiation among bvFTD, svPPA, and nfvPPA patients on both single and combined measures. Moreover, they capture longitudinal behavior change, though more pre-post data from individuals converting from asymptomatic to symptomatic FTD is still needed to make longitudinal estimates more accurate.

## Conflicts of interest

No relevant disclousures.