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Neurocognitive allostatic interoception in FTD compared to other neurodegenerative diseases

Recent allostatic-interoceptive predictive coding theories propose that efficient regulation of the internal milieu is necessary to correctly anticipate environmental challenges. These theories are based on neurocognitive models of allostatic load and interoceptive processes, dimensions convergently affected in behavioral variant frontotemporal dementia (bvFTD). Moreover, recent link between interoception, emotion and social cognition in bvFTD and other conditions suggest a critical dimensional role of allostatic interoceptive overload in the pathophysiology of neurodegeneration. Based on these antecedents, I will propose the hypothesis that bvFTD may be characterized by an imbalance of the predictive allostatic-interoceptive priors, with manifestations across psychological, cerebral, cardiocerebral and peripheral dimensions. Further, I will propose a set of theory-driven predictions, which could be subsumed into a dimensional framework integrating neurocognitive and physiological markers into a multimodal assessment of allostatic interoceptive overload. Under such framework, cognitive and behavioral impairments of bvFTD would be predicted by structural and connectivity deficits among critical allostatic interoceptive brain' hubs, altered cardiocerebral activity (i.e., heart evoked potential), and other measures of allostatic overload, jointly yielding meaningful associations with clinical manifestations. I will present preliminary evidence supporting this approach. Such framework could help to further understand the hallmarks behavioral and pathophysiological dysregulations of bvFTD within a predictive coding account, strengthening clinical models integrating its neurological and psychiatric manifestations.

