

## Saturday

### **Interoception but not cognition predicts emotion recognition in behavioural-variant frontotemporal dementia: comparisons with Alzheimer's Disease and Parkinson's Disease.**

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**State of the art:** The mechanisms underlying the emotion recognition difficulties in behavioural-variant frontotemporal dementia (bvFTD), and to lesser degree in Alzheimer's disease (AD) and Parkinson's disease (PD), are unknown. Here, we investigated the role of interoceptive accuracy, the ability to accurately detect internal cues (e.g., one's heart beating), and cognition, as candidate mechanisms underlying emotion recognition impairment.

**Methodology:** One hundred and sixty-eight participants (52 bvFTD; 41 AD; 24 PD; 51 controls) were recruited. Emotion recognition was measured with the Facial Affect Selection Task or the Mini-Social and Emotional Assessment. Interoception was assessed with a heartbeat detection task where participants pressed a button each time they: 1) felt their heartbeat (Interoception condition); or 2) heard a recorded heartbeat (Exteroception control condition). Voxel-based morphometry analyses were conducted to identify neural correlates associated with emotion recognition and interoceptive accuracy.

**Results:** All patient groups showed worse emotion recognition than controls (all  $P$ 's < .001). In contrast, only bvFTD showed worse interoceptive accuracy than controls ( $P$  < .001). Regression analyses revealed that emotion recognition performance was predicted by worse interoceptive accuracy in bvFTD ( $P$  = .003) and worse cognition in AD and PD ( $P$  < .001 and  $P$  < .008, respectively). Neuroimaging analyses revealed common brain regions associated with emotion recognition and interoceptive accuracy in bvFTD, including the insula, orbitofrontal cortex and amygdala.

**Conclusion:** Emotion recognition difficulties are due to different underlying causes in bvFTD, AD and PD. Our results suggest that disease-specific interventions are therefore needed to improve emotion processing in these syndromes.

### **Conflicts of interest**

None.