Apathy associated with impaired recognition of happy facial expressions in Huntington's disease

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Background: Previous research has demonstrated an association between emotion recognition and apathy in a number of neurological conditions involving fronto-striatal pathology, including Parkinson's disease and brain injury.

Aims: In line with these findings, we aimed to determine whether apathetic participants with early Huntington's disease (HD) were more impaired on an emotion recognition task compared to non-apathetic participants and healthy controls.

Methods: We included 43 participants from the TRACK-HD study who reported apathy on the Problem Behaviours Assessment – short version (PBA-S), 67 participants who reported no apathy and 107 controls matched for age, sex and level of education. During their baseline TRACK-HD visit, participants completed a battery of cognitive tests including an emotion recognition task, the Hospital Depression and Anxiety Scale (HADS) and were assessed on the PBA-S.

Results: Compared to the non-apathetic group and the control group, the apathetic group were impaired on the recognition of happy facial expressions, after controlling for depression symptomology on the HADS and general disease progression (UHDRS total motor score). This was despite no difference between the apathetic and non-apathetic group on overall cognitive functioning assessed by a cognitive composite score.

Conclusions: Impairment of the recognition of happy expressions may be part of the clinical picture of apathy in HD. While shared reliance on fronto-striatal pathways may

broadly explain associations between emotion recognition and apathy found across a number of patient groups, further work is needed to determine what relationships exist between recognition of specific emotions, distinct subtypes of apathy and underlying neuropathology.