# P-793 - REDUCED INTRACORTICAL FUNCTIONAL CONNECTIVITY IN HUNTINGTON'S DISEASE

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**Introduction:** Functional network disruption in degenerative dementia has been reported. EEG coherence is used to assess functional connectivity between brain areas. Previous studies of Huntington's disease (HD) reported about electroencephalography (EEG) spectral power and source location, but coherence has not yet been examined.
**Objectives and Aims:** To examine EEG intracortical functional connectivity in HD using low-resolution brain electromagnetic tomography (LORETA).
**Methods:** In 55 HD patients and 55 controls, 3-minute 19-channel vigilance-controlled EEG was recorded, and recomputed to current densities of 6239 cortical sLORETA voxels. These were recomputed into source model time series for 19 regions of interest (ROIs). Coherence overestimation due to volume conduction was avoided by computing functional connectivity as 'lagged' coherence. This was done for each ROI pair (19*18/2=171) in each of 8 EEG frequency bands (delta through gamma). Statistics tested coherences (a) HD patients versus controls, and (b) HD patients in early versus late disease stages.
**Results:** (a) HD patients showed only reduced connectivities compared to controls ($p < 0.05$ corrected for multiple comparison), involving EEG theta, alpha-1-2 and beta1-2-3 frequency bands. The largest number of reduced connectivities occurred in alpha-1 (79 cases) and beta-2 (96 cases). (b) HD stage-1 versus stage-3-4 revealed only one significant difference.
**Conclusions:** HD compared to controls showed massive reduction of functional connectivity. This occurred early and remained stable during disease progression. As in other dementing disorders, for example Alzheimer disease, the largest reduction concerned alpha and beta EEG frequencies. The results suggest a neocortical disconnection syndrome of a primarily subcortical disease.



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